

NOUN PHRASE STRUCTURE
IN MODERN PERSIAN

by

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Thesis Submitted for the Degree of
Doctor of Philosophy
of the
School of Oriental and African Studies
University of London
July 1981.

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ABSTRACT

This study is concerned with the internal structure of the noun phrase in the spoken form of Modern Persian. The theoretical framework is based essentially on Phrase Structure grammar, and is in the form of a three-level version of the X-bar Convention notation. That is, for every lexical category X, the Phrase Structure grammar is assumed to consist of three hierarchic syntactic categories X' , X'' , and X''' , each of which can be expanded to dominate a head and various modifiers.

This thesis consists of five chapters (including the Introduction) and a concluding section. The function of chapter one is to provide some clarification of the subject, the language, and the theoretical framework utilized in this study. The chapter also explains the motivation for the subject studied, as well as the reason for employing a three-level hypothesis of the X-bar Convention for the analyses presented.

Chapter two introduces noun phrases and explores the constituents which form them. Each of such constituents is then considered in the chapters that follow. In introducing noun phrases, chapter two also deals with the categorization of noun phrases and their distinguishing features, in particular those associated with definiteness/indefiniteness. In addition to this, the chapter presents

a study on demonstratives.

Chapter three begins with a definition of adjectives, showing that a satisfactory definition for these constituents can only be based on four primary characteristics. The question of adjectives in comparative constructions and coordination is also dealt with in this chapter.

Chapter four is dedicated to the discussion of quantifiers. These constituents are shown to consist of different types, each of which is distinguished by particular characteristics.

Chapter five covers the structure of relative clauses and examines the constituents which form such structures. In addition to this, chapter five investigates the process of pronominalization within relative clauses.

Finally, the concluding section consists of a comprehensive set of Phrase Structure rules which are capable of generating all instances of grammatical noun phrases in Modern Persian without the use of transformations.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to Mrs. Natalie Waterson for the consistent encouragement, patience, and assistance she provided me during the hard time of completing this study. I can think of no word which sufficiently conveys my thanks to her. I am also indebted to Dr. Geoffrey Horrocks whose patience in reading my papers, criticisms, and suggestions made the completion of this thesis possible. Many of the ideas expressed here are the product of hours of discussion with him. However, the actual investigation and analysis of the data is my own work and I therefore accept full responsibility for any shortcomings or errors in this study.

I am grateful for the help Dr. Bynon gave me in sorting out the financial difficulties I experienced in the last months of completing the thesis. Her kindness and caring for me can not be forgotten. I am also appreciative to all my Iranian friends who tirelessly served as my informants, and particularly to Miss F. Keshavarz whose special help was invaluable to me.

Finally, I am indebted to my wife, Azam, whose encouragement and cooperation have been of great value to me throughout the thesis. She typed the final version of the thesis as well as the initial versions.

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CHAPTER ONE : INTRODUCTION

1.1 PRELIMINARIES

The aim of this study is, in general, to provide a description of the structure of noun phrases in present-day Modern Persian (see section 1.2). This study does not include the structure of complex noun phrases, except those involving relative clauses.

The fact that the spoken form of the language is almost totally ignored in Persian grammars (some of which are listed in the Bibliography) has been one of the motivations to conduct this study for spoken Persian. Thus, the question of the written form of the language is not addressed in this study, except in cases where this clarifies the analysis of the spoken language.

For the purposes of this study, the data used throughout the thesis were from the writer's knowledge of his native language (Persian), and were consistently checked with 10 other native speakers who were asked to judge the grammaticality of orally presented sentences. It is clear that for various reasons, including the large number of possibilities and styles available in the spoken form (of even one dialect), "... the intuitive judgements of native speakers are susceptible to error."¹ Thus, to determine the grammaticality of a given structure, informants were often questioned more than once. It was very

1. Langacker (1972), p. 16.

helpful to use sentences embedded in larger contexts, so that the informants could feel the actual usage of such sentences. It was also helpful, in many cases, to ask for a judgement on sentences from informants in a group, as well as individually.

The scope of this study is limited mainly to the description and analysis of noun phrases and their constituent parts, excluding head-nouns. Among the motivations for doing this is the fact that such categories, for reasons to be discussed at the beginning of each of the following chapters (and also in 2.3.1 and 2.3.2), are not yet satisfactorily analysed in traditional, structural, or even generative grammars of Persian. It is, of course, neither possible nor desirable to deal with all aspects of such categories within the scope of the present study. Thus, this study is primarily concerned with syntactic arguments, and discussions of phonology and semantics are excluded, unless they provide significant evidence towards the clarification of the issues in question.

Since studies on the syntax of the spoken form of Persian are so few (Birjandi (1978), Farrokhpey (1979), Hajati (1977), and Vajdi (1976)) and, to the best of the writer's knowledge, none, apart from Vajdi (1976), deals specifically with the noun phrase, this work may be considered to be the major contribution to the description of spoken Modern Persian. Furthermore, considering the fact that most of the issues described and analysed in this study have not been accounted for satisfactorily in grammars of written Persian (as discussed in 2.3, 3.1, 4.1, and 5.1), this work can thus

form the basis for further studies on (the spoken and written forms of) Modern Persian, for many of the analyses presented here for the spoken form of the language are also valid for the written form.

In addition to this general introduction (which contains two further sections) and a final concluding section, this study includes four other chapters. The function of the present chapter is to provide some clarification of the subject, the language, and the theoretical framework (including the three-level hypothesis of the X-bar Convention) utilized in this study.

Chapter two introduces some of the basic facts and issues involved in the analysis of noun phrases and their distinguishing features, in particular those associated with definiteness/indefiniteness. In addition, the chapter also presents a study on demonstratives, which leads to their new analysis that they are prenominal N'''-modifiers.

Chapter three discusses adjectives and their primary characteristics. On the basis of the cooccurrence of adjectives with other types of constituents within noun phrases, the chapter puts forward a new analysis that adjectives are N'-modifiers.

Chapter four begins with the discussion of quantifiers and their syntactic characteristics. Such characteristics are based to establish a new analysis which divides the category of so-called quantifiers into three groups : two of them are accounted for as (a type of) noun. The third group of these constituents is treated as prenominal N'''-modifiers.

Chapter five covers the structure of relative clauses and examines the constituents which form such structures. Among these, the most controversial constituent appears to be ke 'that' which introduces embedded sentences as relative clauses. This constituent is shown to be simply a complementizer, and not (as claimed) a relative pronoun equivalent to who, which, etc. of English. The chapter also produces a new analysis for relative clauses which treats them as post-nominal N'''-modifiers. In addition to this, chapter five investigates the process of pronominalization within relative clauses, and accounts for it as the result of the expansion of two different types of category : 'derived category' and 'non-derived category'.

Finally, the concluding section presents a comprehensive set of Phrase Structure rules which are capable of generating all instances of grammatical noun phrases in Modern Persian without the use of transformations.

Notations employed in this study are as follows. Each part of the above-mentioned chapters is distinguished by successive numbers and letters indicating, from left to right, the chapter, section, subsection, and parts of the subsections. For instance, 1.2.3a is a reference to chapter 1, section 2, subsection 3, part a.

The data presented throughout the study are transcribed in **broad** transcription by the system developed for Persian in Lambton (1953, pp. xiii-xx), except for some minor changes in representation of consonants, vowels, and diphthongs, for

ease of typing as shown below.

- (1) i z (as in zud 'soon'), instead of ẓ
- ii s̄ (" " sahr 'city'), " " s̄
- iii z̄ (" " zarf 'deep'), " " z̄
- iv c̄ (" " carm 'lether'), " " c̄
- v ? (" " se?r 'poem'), " " ?
- (2) i ā (as in ab 'water'), instead of a
- (3) i āy (as in cāy 'tea'), instead of āi
- ii ey (" " key 'when'), " " ei

In addition to the transcription for the data, this study has also used notations listed below.

- (4) i Asterisk '*' indicates the ungrammaticality of the structure which it precedes.
- ii Dash '-' indicates simple concatenation. Thus, the structure 'X-Y' stands for the concatenation of 'X' and 'Y'.
- iii Parentheses '()' indicate the optional presence of constituents. Thus, a grammatical structure like 'X (Y) Z' denotes that both the forms 'XYZ' and 'XZ' are grammatical (and may be synonymous).
- iv Double-arrows '⇒' indicate the result of structural changes performed by grammatical rules. Thus, the rule '[XYZ] ⇒ [XZY]' denotes that the constituent string [XZY] is the result of changes from [XYZ] by a given rule.
- v Square brackets '[]' indicate subconstituents in larger contexts or in rules. Thus, in a structure like '[X [Y] Z]', the element 'Y' is separated from the rest of constituents 'X' and 'Z', which themselves are separated from larger possible contexts.

These notations are also complemented by a set of abbreviations such as follows.

- (5) i S stands for 'Sentence'.
- ii NP, N', N'', and N''' stand for 'Noun Phrase'.
- iii VP, V', V'', and V''' " " 'Verb Phrase'.
- iv PP, P', P'', and P''' " " 'Prepositional Phrase'.
- v A stands for 'Adjective'.
- vi Q " " 'Quantifier'.
- vii Su " " 'Subject'.
- viii DO " " 'Direct Object'.
- ix IO " " 'Indirect Object'.
- x Poss " " 'Possessive'.
- xi RC and R stand for 'Relative Clause'.

Finally, the last point about the presentation of the thesis is that examples of Persian are underlined to distinguish them easily in the text and from the rest of data provided.

1.2 LANGUAGE UNDER STUDY

The language described in this study is the spoken form of present-day 'Modern Persian'. This language is the standard language of Iran today, which is used by educated people, mass media, writers, and in court proceedings. Modern Persian (but not in its present-day form), along with 'Pashto', is also the official language of Afghanistan, and, in the Cyrillic alphabet, the language of Tajikistan (in the U.S.S.R.).

A descendant from the Indo-Iranian branch of the Indo-European language family, Modern Persian emerged from 'Middle

Persian' or 'Pahlavi', the language of the Sassanian Empire, and 'Old Persian', the language of the ancient Persian Empire, in about the ninth century A.D. .¹ In addition to Iran, this language spread to many neighbouring countries which, in different historical periods, were parts of the vast Persian Empire (from Constantinople to Bengal and from Central Asia to the south of India). During the 10th-15th centuries, Modern Persian became the language par excellence of a very rich literature, mainly poetry, in Iran,² and the medium of culture and literature throughout the non-Arab Islamic world. Except for borrowing certain items of vocabulary and a few changes in syntax, this language has changed remarkably little since its classical form.

Of the different dialects of Modern Persian (particularly, the dialects of Tehran, Esfahan, Rasht, Mashad, and Shiraz), this study deals with the present-day spoken form of the widely studied dialect of Tehran (the capital of Iran). The term 'present-day' emphasizes the dialect in the form in which it is spoken today. From now onwards, the term 'Persian' refers to the present-day spoken form of the Modern Persian dialect of Tehran, unless otherwise specified. Some of the typical characteristics of this language, in relation to the discussions to be presented in the following

1. For details about Modern, Middle, and Old Persian, see Khanlari (1973).

2. For instance, Rudaki (10th c.), Ferdosi (10th-11th c.), Sa'di (11th c.), and Hafez (14th c.).

chapters, are given below.

1. Persian lacks gender markings. Instead, the gender of nouns is sometimes determined by sex, with separate words for the male and female of the species. For instance, pesar 'boy' and doxtar 'girl', and also mard 'man' and zan 'woman' are pairs of separate words referring to human beings ~~but~~ with different genders, masculine and feminine, respectively.¹ The gender of nouns can also, in some cases, be expressed by the adjectives nar 'male' or mādde 'female' following the noun. Thus, for instance, gāv-e nar 'bull' and gāv-e mādde 'cow' (from the noun gāv 'cow'), and šir-e nar 'lion' and šir-e mādde 'lioness' (from the noun šir 'lion').

2. Persian also lacks case-marking. The grammatical relations of noun phrases are expressed by means of prepositions, postpositions, and, for the subject only, verb-agreement. Such relations are examined in more detail below.

The subject in Persian can be identified in two ways, as follows. First, verb-suffixes, except for the cases to be discussed below, must agree with their corresponding subject in number and person. As an example, consider this agreement in the following sentences.

- | | | |
|-----|--------------------------------|------------|
| (6) | <u>man</u> goft- <u>am</u> | 'I said' |
| | (I) (said-I) | |
| (7) | (6) <u>man</u> goft- <u>am</u> | 'you said' |
| | (I) (said-I) | |
| | (you) (said-you) | |

1. Among such nouns, only pesar 'boy' and doxtar 'girl' can cooccur with the noun bačče 'child' to express gender, as in pesar bačče 'boy child' and doxtar bačče 'girl child'.

- (8) u goft -Ø 'he/she said'
 (he)(said)
- (9) mā goft -im 'we said'
 (we)(said=we)
- (10) somā goft -id 'you said'
 (you)(said-you)
- (11) ānhā goft -and 'they said'
 (they)(said-they)

However, plural nouns that refer to inanimate entities, can take singular verbs instead of plural when functioning as subjects.¹ The following sentences are given to illustrate this.

- (12a) ketāb-hā sangin -e 'books are heavy'
 (books) (heavy) (is)
- (12b) ketāb-hā sangin -and 'books are heavy'
 (are)

Pairs of sentences such as the above are equally grammatical and completely synonymous.

Secondly, subjects must, in the unmarked word-order, precede any other noun phrases functioning, for example, as the direct object, indirect object, etc. Such an order is a significant distinguishing factor for subjects in cases where neither subject nor object are marked as such, and both refer to the same number. In cases like this, the leftmost noun phrase is always interpreted as the subject.² To clarify this, some examples are taken from Hajati (1977, p. 13) as follows.

1. Thackston,^{Jr.} (1978), p. 53.

2. Bateni (1969), p. 77.

- (13) injā ādam heyvān mixor -ad (his sentence (4))
 (here) (man) (animal)(eats -he)

'here man eats animal' (ie, here men eat animal)

- (14) injā heyvān ādam mixor-ad
 (his sentence (5))

'here animal eats man' (ie, here animals eat man)

As demonstrated, in pairs of sentences such as these, the only crucial factor in distinguishing the subject is the order, that is, subjects precede all other noun phrases.

Unlike the subject, the direct object is always marked by a postposition (pronounced as -rā or -ro if it follows a vowel, and -ā or -o, if it follows a consonant), unless it is an indefinite noun phrase (discussed in 2.2). Examples of both cases are presented below.

- (15) man ketāb -o xund -am
 (I) (book -DO) (read-I)
 'I read the book'

- (16) man ketāb xund-am
 'I read books'

Finally, in cases of other syntactic relationships such as, for instance, the indirect object, noun phrases must be marked by prepositions. The preposition which marks indirect objects is invariably be 'to'. Examples of such markings are as follows.

- (17) ketāb -o be man bede
 (book)-DO (to) (I) (give)
 'give the book to me'

- (18) be man ketāb-o bede
'give the book to me'

As in the above examples, indirect objects must always be marked (by the preposition be 'to'), regardless of their position in sentences.

3. The last point to be mentioned about Persian is that it has an unmarked SOV (Subject, Object, Verb) word-order. However, because of the means available to mark noun phrases for their syntactic relationships in sentences (as discussed above), grammatical constituents can also occur in almost any order. Some such orders of constituents are shown in the following examples.

- (19a) man ketāb -o be ahmad dād -am
(I) (book)-DO (to) (Ahmad) (gave -I)
'I gave the book to Ahmad'

- (19b) ketāb-o man be ahmad dād-am
'the book I gave to Ahmad'

- (19c) be ahmad man ketāb-o dād-am
'to Ahmad, I gave the book'

- (19d) dād-am man ketāb-o be ahmad
'I gave the book to Ahmad'

The sentences above are all grammatical, but differ in their interpretation. Among these sentences, only (19a) has an unmarked order of constituents, in which the verb dād-am 'gave-I' is preceded by the subject, direct object, and indirect object, successively.

1.3 THEORETICAL FRAMEWORK

The theoretical framework employed in this thesis for the description of the structure of noun phrases in Persian is essentially that of Gazdar (1980); that is, briefly, a generative grammar is assumed to consist of a set of basic phrase structure rules supplemented by rule schemata, and to utilize complex symbols (of the X-bar theory) and various feature conventions. It is also assumed that, such a grammar is capable of generating all and only the grammatical sentences of the language under analysis without any transformations. Furthermore, the phrase structure (henceforth, PS) rules of this grammar are assumed to be context-free, and are in the form of a three-level version of the X-bar theory (as introduced below). To clarify these points, the present section will provide a survey of the 'X-bar Convention' and its development and exploitation for English. This survey starts with Chomsky's (1970) introduction of the X-bar Convention, then covers Jackendoff's (1977a,b) reformulation of X-bar PS-rules for English, and finally reviews Gazdar's (1980a,b) exploitation of the X-bar Convention and his analysis of some relevant English syntactic structures. This survey is not, of course, intended to present justifications (or criticisms) of the three models, but only to provide a brief explanation of the X-bar theory and some clarification for the theoretical framework utilized here.

1.3.1 Chomsky's (1970) 'X Convention'

Introducing the 'Lexicalist Hypothesis' in analysing derived nominals (such as 'Noam's invention of the new theory'), Chomsky (1970) noticed that there are some syntactic similarities in the distribution of the major categories noun and adjective, on the one hand, and adjective and verb, on the other. These similarities, Chomsky (1970, pp. 198-199) argued, must be the result of the sharing of particular feature(s) among syntactic categories.

"It is quite possible that the categories noun, verb, adjective are the reflection of a deeper feature structure, each being a combination of features of a more abstract sort."¹

To demonstrate this, syntactic relationships among the three categories noun (N), verb (V), and adjective (A) can be described as follows, where the feature $[\pm N]$ stand for nominal and $[\pm V]$ for verbal characteristics.

(20)

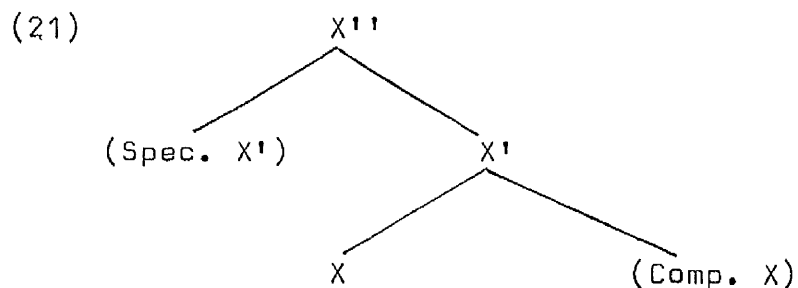
	+N	-N
+V	A	V
-V	N	

Thus, adjectives, for instance, are syntactically similar to both nouns and verbs, though in different ways.²

1. Chomsky (1970), p. 199.

2. Such similarities between adjectives and verbs and also adjectives and nouns have also been noted by Lakoff (1970a), and Ross (1966) respectively, though the facts are handled rather differently.

Such observations led Chomsky (1970, p. 210) to revise the usual formation of PS-rules so as to reflect directly the similarities of categories. This reformulation resulted in a type of PS-rules, referred to as the ' \bar{X} (= X' or X -bar) Convention', ' X -bar Syntax', or ' X -bar Theory', with categories related to each other in the way illustrated by the following structure schema, where X stands for lexical categories, X' and X'' for the corresponding phrasal categories projected above them.

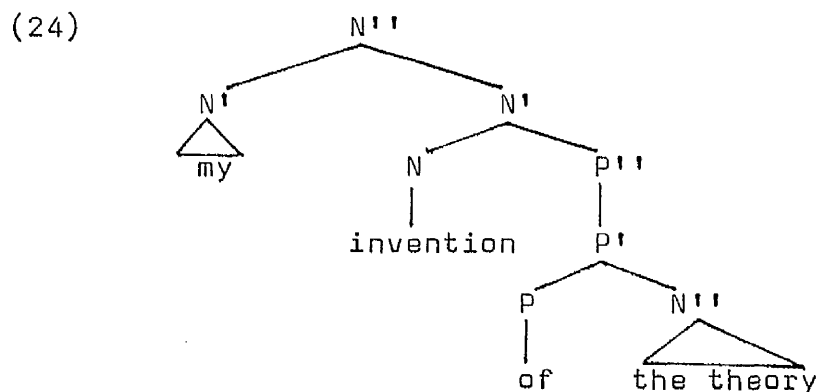


Given this schema, the expansion of English major categories NP, VP, AD, and PP can then be generalized as the following, in which " n " denotes the number of bars (or primes) required.

$$(22) \quad X^n \longrightarrow \dots X^{n-1} \dots$$

As demonstrated by (21), in such configuration X is the head of the category X' , and X' the head of the category X'' . Furthermore, both the 'specifier X' ' and 'complement X' ' can be replaced by certain syntactic categories. To clarify this, the following example is presented in the X -bar Convention type of phrase-markers (with prime notation) as follows.

(23) my invention of the theory.



Notice that considering X , Specifier X , and Complement X as variables, the schema (21) presents a set of PS-rules, some of which are listed below.

(25) a. $N'' \longrightarrow (\text{Spec. } N') N'$

b. $N' \longrightarrow N (\text{Comp. } N)$

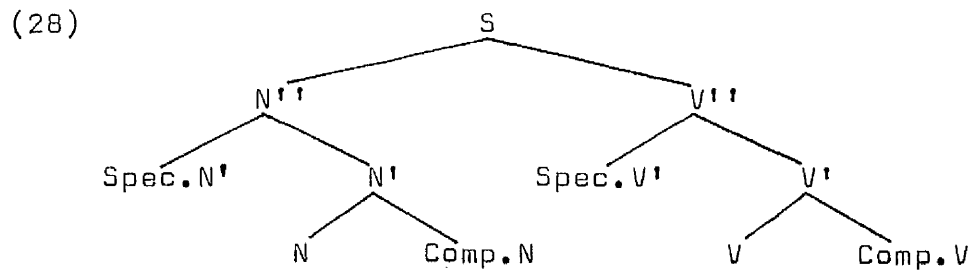
(26) a. $V'' \longrightarrow (\text{Spec. } V') V'$

b. $V' \longrightarrow V (\text{Comp. } V)$

Given these, the initial PS-rule (27) is then put forward to relate major constituents of sentences, as illustrated below.

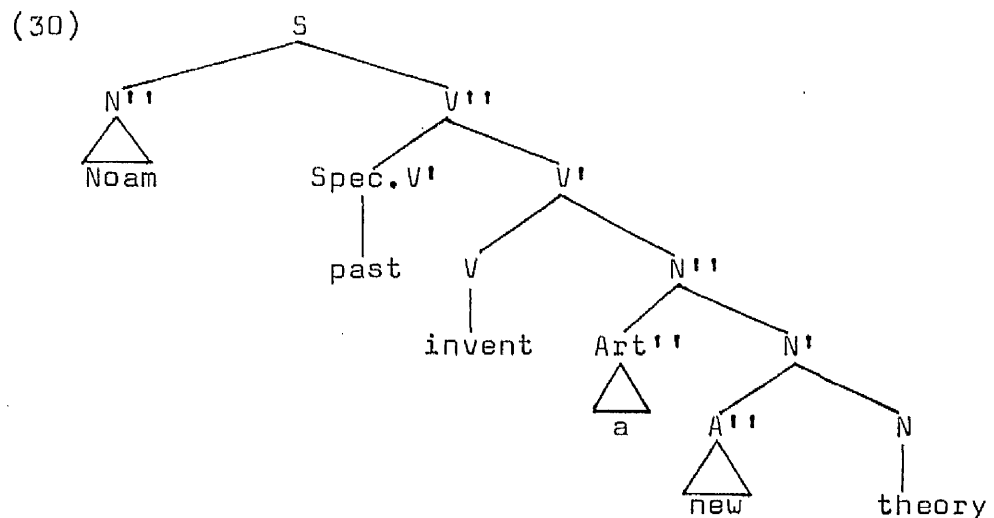
(27) $S \longrightarrow N'' \quad V''^1$

-
1. Since rules such as passivization, for English, generalize syntactically across NP and S, it is desirable that the two syntactic categories (ie, NP and S) be analysed as phrasals of the same level. Considering this fact, Chomsky's rule given in (27) above does not reflect such phrasal generalization. This point is taken later in Jackendoff (1977b, p. 54.) by considering the initial PS-rule of English, within \longrightarrow



In conclusion, the sentence in (29) below is analysed by means of the X-bar Convention to provide further clarification.

(29) Noam invented a new theory.



1.3.2 Jackendoff's (1977) 'X Syntax'

Since the introduction of Chomsky's (1970) X-bar Convention, no serious attempt was made to develop and construct a coherent and comprehensive system of the X-bar PS-rules

→ his proposed three-level hypothesis, as the simplified schema below.

$$(i) V''' \longrightarrow N''' \quad V''$$

(for English), until Selkirk (1977) and Jackendoff (1977a, b).¹ This was partly because many linguists, as Jackendoff (1977b) explains,

"... had inherited a misplaced bias against phrase structure from the early work in generative grammar, which had little of interest to say about phrase structure grammar, stressing only its insufficiency for linguistic description;"²

In order to rule out such inherited bias against PS, Jackendoff made a serious attempt to reformulate the base rules of an English transformational grammar in line with the principles of the X-bar Convention. The result came out first in an article (that is, Jackendoff (1977a)) and later in his book Jackendoff (1977b) : X Syntax : A Study of Phrase Structure.

In his book, Jackendoff (1977b, pp.32-33) captures syntactic similarities of categories by sets of features such as [\pm Subject], [\pm Object], and [\pm Complement]. According to such features, similarities and differences of major categories noun (N), adjective (A), verb (V), and

-
1. Both of these are based on the generative-transformational principles, Selkirk (1977) is concerned only with the structure of English noun phrase in terms of the X-bar Convention, but Jackendoff (1977a, b) presents a generative grammar of English (including the structure of noun phrase) in his proposed X-bar theory. Among these two, the latter, which covers more ground, is chosen for discussion here as the second stage in the development of the X-bar theory.
 2. Jackendoff (1977b), p. xi.

preposition (P) are demonstrated as follows.

(31)

	Subj	Obj	Comp
V	+	+	+
P	-	+	+
N	+	-	+
A	-	-	+

Here, the feature [Subject] is used for those categories which have a subject, [Object] distinguishes those which can have direct objects as their complement, and [Complement] refers to the possibility for categories of having complements.

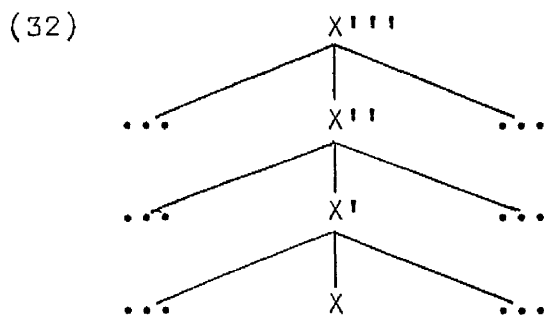
Given cross-categorical generalization, he then proposes to characterise the nature of PS-rules by his hypothesis, the 'Uniform Three-Level Hypothesis' (UTLH), as quoted below.

" $X^n \longrightarrow (C_1) \dots (C_j) - X^{n-1} - (C_{j+1}) \dots (C_k)$,
 where $1 \leq n \leq 3$, and for all C_i , either $C_i = Y'''$ for
 some lexical category Y , or C_i is a specified grammatical formative."¹

As the consequence, for every lexical category X , the UTLH assigns three hierarchic categories, such that X''' directly dominates X'' , and X'' directly dominates X' . The schema representing these relationships can be in the

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1. Jackendoff (1977b), p. 36. The rule can be read as: every category X with " n " number of primes, where " n " is a number between 1 and 3, may be expanded to another category X but with " $n-1$ " number of primes and various preceding and following constituents, each of the constituents can either be a category Y''' corresponding to the lexical category Y , or a specified grammatical formative.

following form.



The UTLH also predicts that all PS-rules of English must be of the form (33) below, where $1 \leq n \leq 3$

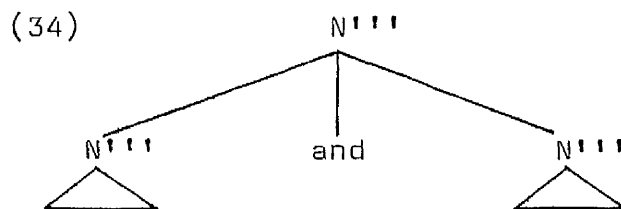
$$(33) \quad X^n \longrightarrow \dots X^{n-1} \dots$$

Furthermore, each of the categories X''' , X'' , and X' has, according to the UTLH, optional preceding and following constituents. These optional constituents are called in Jackendoff (1977b) 'Specifiers' and 'Complements', respectively. In general, complements of X (within X') are functional arguments (which strictly subcategorize X and which are essential to the interpretation of expressions containing X); of X' (within X'') are restrictive modifiers (which add extra truth conditions to the assertion of X' and further restrict its extension); and of X'' (within X''') are non-restrictive modifiers (which add no condition to the assertion of X''' , but add some of auxiliary information).¹ By distinguishing and dividing different types of complementation into different levels of available complement position within

1. Jackendoff (1977b), pp. 57-64.

his proposed X-bar theory, Jackendoff claims to have captured a systematic relationship between the syntax and semantics of English.

However, Jackendoff's analysis (in terms of the UTLH), as it stands, appears to be quite controversial. One of the controversial points is that the UTLH contradicts the syntactic structure of coordination, for coordination is said to involve equal syntactic categories and result in the same category. For instance, the coordination of two nominal categories N''' requires the following structure.

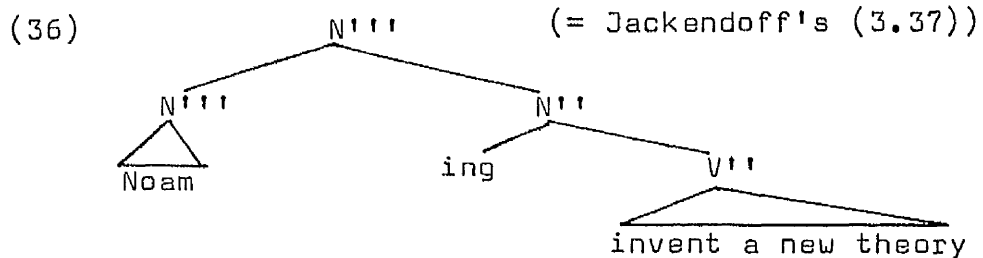


Such structures certainly violate the hierarchic arrangement of categories in UTLH, since the main N''' has no head N'' . This problem in relation to the coordination of Persian adjectives will be dealt with in detail in chapter three (section 3.4). However, faced with the structure of coordination (in English), Jackendoff (1977b, p. 51) proposes an ad hoc solution in the form of a rule such as (35) below, which actually differs from the rest of his PS-rules (and the schema (33) above).

$$(35) \quad X^n \longrightarrow X^n - (\text{Conj} - X^n)$$

Another notable violation of Jackendoff's analysis is the structure of gerundive nominals such as 'Noam's inventing a

new theory'. According to Jackendoff (1977b, pp. 51-53), such nominals would best be analysed in the way illustrated, by the X-bar notation, below.



But, structures like (36) are not possible within the UTLH, since the main N''' has no noun head. For cases like this, Jackendoff again proposes an ad hoc exceptional set of rules such as (37), which differs in many ways from the schema (33) permitted by his UTLH.

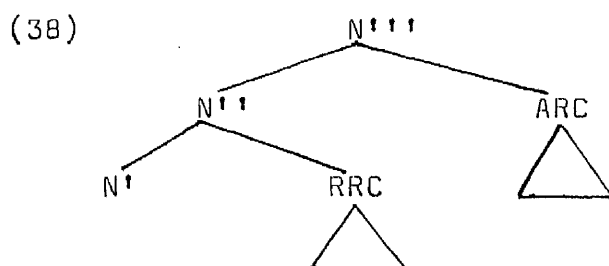
$$(37) \quad N'' \longrightarrow \text{ing} - V''^1$$

Besides these problems with Jackendoff's analysis, a point which has most relevance to this thesis is his treatment of English relative clauses. In his analysis, Jackendoff first correctly observes that :

"The differences in intonation, complementizer, and distribution between restrictives and appositives argue rather strongly that the two kinds of clauses have different syntactic sources."²

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1. Jackendoff (1977b), p. 52, rule (3.39b).
 2. Jackendoff (1977b), p. 172. Such differences between restrictive and appositive relative clauses are presented and discussed in Jackendoff (1977b), p. 171. For a similar discussion for the differences of Persian relative clauses, see 5.2.1d of this thesis.

Then, having made such observation (particularly, for the syntactic differences between restrictive and appositive relative clauses), Jackendoff (1977b, p. 172) concludes that restrictives are N'' -complements, and appositives N''' -complements. A structure schema representing this distinction is shown in (38), where RRC stands for restrictive relative clause and ARC for appositive relative clause.



This analysis is, in fact, capable of explaining many facts about the syntax of English relative clauses, including the cooccurrence of restrictives and appositives such that the former precede the latter (as discussed in 5.2.2). But it wrongly predicts that restrictive relativization does not take place within full noun phrases, or put differently, restrictive relative clauses do not have full head-noun phrases (ie, N'''). This point will be raised in more detail later, when discussing the syntactic structure of Persian relative clauses (in 5.2.2).

Apart from the treatment of relative clause, the above-mentioned points against Jackendoff's (1977b) reformulation of the X-bar Convention clearly show that his UTLH (quoted earlier), in regard to the expansion of the

three syntactic categories X''' , X'' , and X' , can not be correct and needs further elaboration. On the strength of such facts, a similar hypothesis is not adopted for the analysis of Persian noun phrases, but Jackendoff's proposal of three hierarchic categories corresponding to every lexical category is accepted on the basis of the syntactic structure of Persian noun phrases such as the following.

- (39) $\text{ra?is} \quad \text{-e mohtaram} \quad \text{-e dādgāh-e ?āli}$
 (head) (respected) (high court)
 -ye tehrān
 (of) (Tehran)

'the respected head of the high court in Tehran'

- (40) $\text{mo?allem} \quad \text{-e fizik} \quad \text{-e dābirestān-e}$
 (teacher) (of) (physics) (of) (high school)
 $\text{?adab} \quad \text{-e esfahān}$
 (Adab) (of) (Esfahan)

'the teacher of physics of Adab high school in Esfahan'

- (41) $\text{un} \quad \text{dust} \quad \text{-e ?engelisi} \quad \text{-ye} \quad \text{man} \quad \text{ke}$
 (that) (friend) (English) (of) (I) (that)
 $\text{diruz} \quad \text{injā} \quad \text{bud}$
 (yesterday) (here) (was)

'my English friend, who was here yesterday'

- (42) $\text{kolbe} \quad \text{-ye kučik} \quad \text{-e kenāre} \quad \text{rudxune}$
 (cottage) (small) (beside) (river)
 $\text{ke} \quad \text{ahmad} \quad \text{tu} \quad \text{-s} \quad \text{zendeqi-mikard}$
 (that) (Ahmad) (in) (it) (lived)

'the small cottage beside the river, in which Ahmad lived'

These examples are used to argue that the structure of noun phrases in Persian requires a three-level system

of PS-rules. To demonstrate this fact, consider that the noun phrase in (42), for instance, contains, besides its head kolbe 'cottage', three different types of postnominal modifier (as distinguished by underlines). Each of such modifiers, because they belong to different levels of complement position, can be deleted without affecting the grammaticality of their NP-constructions, as illustrated below.

- (43a) kolbe -ye kučik -e kenāre rudxune ke
ahmad tu -š zendegi-mikard

'the small cottage beside the
river, in which Ahmad lived'

- (43b) kolbe -ye kučik -e kenāre rudxune

'the small cottage beside the river'

- (43c) kolbe -ye kučik

'the small cottage'

- (43d) kolbe -ye kenāre rudxune ke ahmad tu -š
zendegi-mikard

'the cottage beside the river,
in which Ahmad lived'

- (43e) kolbe -ye kenāre rudxune

'the cottage beside the river'

In addition to this, the rule of pronominalization (in whatever form it must be for Persian) affects NPs such as (42) differently and results in two pronominalized structures as follows.

- (44a) unjā 'there'

- (44b) unjā ke ahmad tu -š zendegi-mikard

'there, in which Ahmad lived' (ie,
the place where Ahmad lived)

Pairs of pronominalized structure such as (44a) and (44b) indicate that pronominalization has affected NPs of different levels, and therefore the last postnominal modifier of NP in (42) must belong to a level of complement different from those of the other postnominal modifiers. Given this it must also be noted that the first postnominal modifier of (42) which is adjective, can, unlike the second modifier, also be used pronominally. Thus, corresponding to (43b), the NP in (45a) is also grammatical, but (45b) is ungrammatical.

(45a) kučiktarin kolbe -ye kenāre rudxune¹
 (smallest)
 'the smallest cottage beside
 the river'

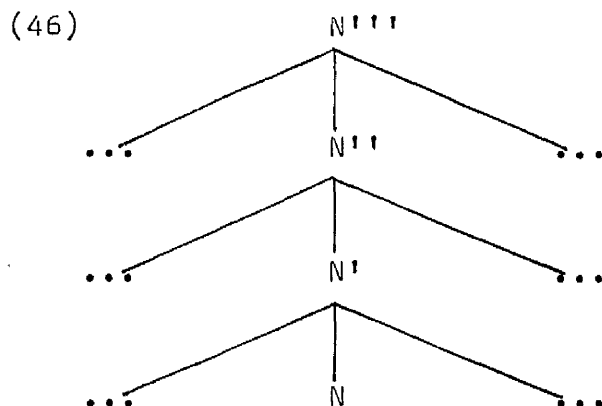
(45b)* kučiktarin -e kenāre rudxune kolbe

The grammatical movement of the first modifier (that is, the adjective kučik 'small') to the pronominal position clearly shows that the two types of postnominal modifier in (43b) must belong to two different complement positions. Otherwise, if the two types of postnominal modifier in (43b) were of the same complement position, they would both be able to be moved to pronominal position and therefore (45b) would be grammatical.

Bearing these facts in mind, it can now be claimed

1. The adjective kučiktarin 'smallest' in (45a) is the superlative form of kučik 'small'. See chapter three (section 3.3.4).

that the analysis of Persian noun phrases requires a three-level system of PS-rules such that every lexical category noun has three dominating corresponding syntactic categories N' , N'' , and N''' , each contains a specifier and complement as well as a head. Each such specifier and complement, referred to in this study as prenominal modifier and postnominal respectively, and their syntactic characteristics will be explored later. For the present, it should be noted that the PS-rules to be utilized in this study will have to be formulated in the way that admit structures such as the following, where ' ... ' must be filled by different possible syntactic categories.



As well as the general schema (46) which designates the nature of PS-rules to be used for Persian, this study makes use of resources which were first introduced and elaborated in Gazdar (1980), as discussed below.

1.3.3 Gazdar's (1980) 'PS-Grammar'

As a simpler alternative to the transformational machinery of generative grammars (including Chomsky (1970) and

Jackendoff (1977a,b) with the X-bar Convention), Gazdar (1980a,b) puts forward a model which, by utilizing the X-bar Convention and other resources, is capable of generating English structures by purely context-free PS-rules, and crucially no transformation or coindexing devices. Some of the characteristics of this purely PS-model in relation to the syntactic structure of noun phrases and their relevant analyses (which will be used later in this study) are presented as follows.

Following the fact that "The strongest way to constrain a component is to eliminate it."¹, Gazdar (1980a,b) eliminates transformational rules and shows that their function can be reassigned to other parts of the grammar. To do this, he has enriched the usual PS-rules of English in several ways, some of which are discussed below. Furthermore, Gazdar (1980b) has also introduced a convention, said to be universal, for the distribution of features, as quoted below.

"In a rule of the form $D \rightarrow \dots \& \dots$ where $\&$ is the head of D , $\&$ carries all features associated with D ."²

According to such a convention, called the 'Head Feature Convention' (HFC), features of syntactic categories are automatically carried down to their heads. Put differently, the head of each category has the same features as its dominating category. This principle, among its different

1. Gazdar (1980b) p. 2.

2. Ibid, p. 7.

advantages, makes very easy the analysis of subject-verb agreement, for features associated with number can simply be carried from initial categories over relevant head-nouns and head-verbs, and predict correct agreement between them.¹

The HFC is further extended to accommodate as features certain coordinating morphemes, complementizers, and prepositions. Such extension of the HFC results in simpler analyses (within Gazdar's PS-grammar) for many syntactic facts of English, including the structure of coordination. From these, since a study of such simplified analyses by means of the HFC (and its extension) is beyond the purpose of the present subsection, Gazdar's analysis of coordination in English is chosen for description, as follows.

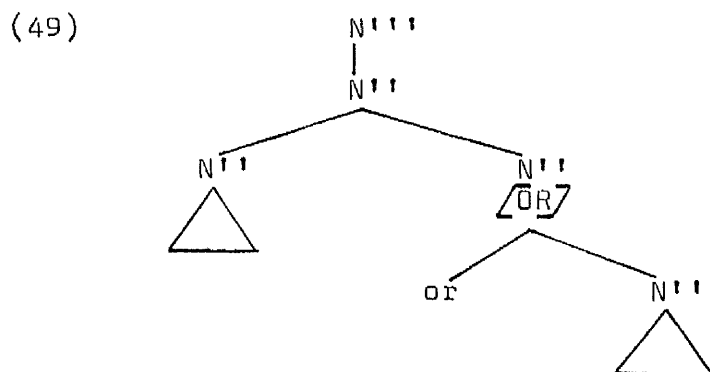
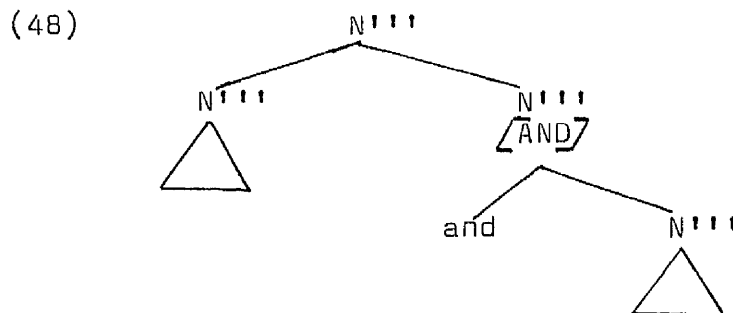
According to Gazdar's (1980b, pp. 36-38) analysis, coordination constituents are categories (like the usual syntactic categories N''' , N'' , etc.) but with coordinating morphemes among their defining features. Coordinating morphemes can then (according to the HFC) be carried down other lower syntactic categories, unless the coordination category (ie, the category with the coordinating morpheme as one of its features) is expanded by PS-rules to the named coordinating morpheme followed by the same syntactic category but with no such coordinating features. Such expansion of coordination constituents can be clarified by the

1. For more explanation on the contribution of the HFC principle in simpler analysis of subject-verb agreement, see Gazdar (1980b), p. 8.

following rule schema, where α stands for coordinating morphemes and X for syntactic categories.

$$(47) \quad \boxed{\alpha}^X \longrightarrow \dots \alpha X$$

The expansion of coordination constituents is also demonstrated by structure schemas of English such as the following, where coordinating morphemes are named as and and or and their syntactic categories are specified as N''' and N'' , respectively.



In his reformulation of PS-grammar, Gazdar (1980b, pp. 10-13) also proposes to interpret PS-rules as "node admissibility conditions" rather than the traditional string-to-string mapping rules. The form of the PS-rules can accordingly be, instead of the familiar arrow rewritings,

such that more directly reflects the admissible structures. For this purpose, PS-rules are proposed in the form demonstrated in (51), instead of the familiar (50), where X, Y, and Z are symbols for different syntactic categories.

$$(50) \quad X \longrightarrow Y Z$$

$$(51) \quad \underset{X}{\lceil Y Z \rceil}$$

Furthermore, there are two innovations in Gazdar's grammar which, having regard to the theoretical framework of this study, need to be introduced here. The first of these is the introduction of "metarules", which express generalizations between rules of a grammar.¹ In other words, metarules predict the relationships between rules of the language, and allow large number of rules to be collapsed as a single statement expressing generalization. These rules can be defined simply as "a grammar for the grammar".² Metarules are proposed in the following form, with X, Y, Z and W used as symbols for different syntactic categories.

$$(52) \quad \underset{W}{\lceil X Y Z \rceil} \implies \underset{W}{\lceil Y X Z \rceil}$$

-
1. The difference between transformational rules and metarules is stated in Gazdar (1980b), p. 43, as "... a transformation maps trees into trees whereas a metarule maps rules into rules."
 2. Gazdar (1980b), p. 40.

$$(53) \quad \underset{w}{\langle \langle X Y \rangle \rangle} \Rightarrow \underset{w}{\langle \langle X Y Z \rangle \rangle}$$

An example of structures which can be predicted by such rules is the relationships between English active verb phrases with transitive verbs and their corresponding passives,¹ as shown below.

$$(54) \quad \underset{\substack{V' \\ \langle \text{TRN} \rangle}}{\langle \langle V N' X \rangle \rangle} \Rightarrow \underset{\substack{V' \\ \langle \text{PAS} \rangle}}{\langle \langle V X \rangle \rangle}$$

In this rule, the feature $\langle \text{TRN} \rangle$ indicates that the head of the active verb phrase must be a transitive verb, and the feature $\langle \text{PAS} \rangle$ must by virtue of the HFC be carried down to the head of the passive verb phrase to determine its passive form. Thus, having a general metarule like (54), the rules of active and passive verb phrases do not need to be listed in the grammar separately, for every instance of active verb phrase with transitive verb has a passive corresponding in English.

Another tangible case for the application of metarules is the relationship between Persian prenominal and postnominal adjectives (discussed in chapter three), for all prenominal adjectives have postnominal counterparts. To clarify this, an example of the prenominal adjective and its corresponding postnominals is presented below.

$$(55a) \quad \begin{array}{lll} \text{doxtar} & -e & \text{xošgel} & \text{'the beautiful girl'} \\ \text{(girl)} & & \text{(beautiful)} & \end{array}$$

1. For more detail about the analysis of English passivization in terms of Gazdar's metarules, see Gazdar (1980b), pp. 45-55.

- (55b) doxtar -e xōsgeltar
 (girl) (more beautiful)
 'the more beautiful girl'
- (56) xōsgeltarin doxtar
 (most beautiful) (girl)
 'the most beautiful girl'

Supposing, for the present, the feature $\langle \bar{Pre} \rangle$ for prenominal adjectives (which must be interpreted as the superlative morpheme -tarin 'most') and the feature $\langle \bar{Post} \rangle$ for postnominal adjectives (which must be interpreted either as null \emptyset for simple adjectives or the comparative morpheme -tar 'more' for comparatives), and also that both pre- and postnominal adjectives are dominated by N' (as discussed in chapter three), the metarule needed to express such a relationship between adjectives can be in the following form.

$$(57) \quad N' \left[\begin{array}{c} N \\ \langle \bar{Post} \rangle \end{array} \right] -e \left[\begin{array}{c} A' \\ \langle \bar{Post} \rangle \end{array} \right] \Rightarrow N' \left[\begin{array}{c} A' \\ \langle \bar{Pre} \rangle \end{array} \right] \emptyset N$$

Notice that the absence of the syntactic features of N' and its head N in both sides (the input and output) of the above metarule implies that such features as are presented in any particular instance must not be changed (or deleted). It is, in fact, the case that metarules do not affect items of the input rules, unless explicitly specified.

"The output rule of a metarule is identical to the input rule except in respect of those items

specifically changed by the metarule and changes consequent upon those changes."¹

The introduction of metarules (which generalize the relationship between PS-rules of the grammar) eliminates effectively the need for many of the transformational rules that would otherwise be required for the description of each string generated. Another important function of metarules is to relate systematically the semantics of output rules to that of input rules. Since such discussion of the semantics is not relevant to the syntactic analysis of this thesis, the semantic functions of metarules will not be discussed here.

Gazdar's (1980a,b) second innovation in reformulating PS-rules is concerned with the analysis of "unbounded dependencies". According to his view, unbounded syntactic dependencies can be handled by PS-grammar in an elegant and general way, provided that the grammar permits a complex symbol system of syntactic categories,² and the possibility of making statements about the set of rules that it may use. In particular, Gazdar sets up "derived categories" consisting of nodes like α/β , which can be expanded in the usual way except that :

"... somewhere in every subtree of α/β type there will occur a node labelled β/β dominating a resumptive pronoun, a phonologically null dummy element or the

1. Gazdar (1980b), p. 42.

2. Ibid, p. 56.

empty string, and every node linking α/β and β/β will be of the form σ/β for some category σ .¹

In more detail, derived categories can be interpreted as a set of the category α which also contains a hole of the type β , and both α and β are basic categories which are already established in the language. As an example, the derived category VP/NP is interpreted as a verb phrase with an NP hole in it. This hole in the expansion of its derived category results in a pronoun, a phonologically null element, or an empty string. The rules expanding such categories, referred to as "derived rules", are exactly like the basic PS-rules except that the category which expands and also one of the constituents which results from the expansion, must be of the type 'derived categories', and both contain the same 'hole-indicating' category. Such expansions are illustrated in the following rules of English (in prime notation) proposed by Gazdar (1980b, p. 58).²

$$(58) \quad P''/N'' \left[P'/N'' \right]$$

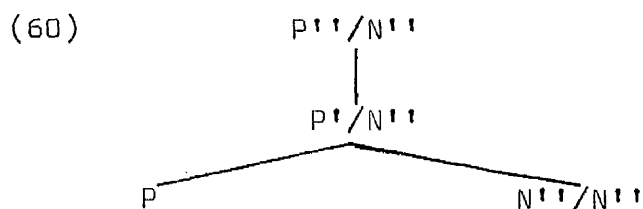
$$(59) \quad P'/N'' \left[P \quad N''/N'' \right]$$

Notice that in these rules, both the category which expands (that is, P''/N'' in (58) and P'/N'' in (59)) are

1. Gazdar (1980b), p. 57.

2. Derived rules in (58) and (59) are taken from Gazdar (1980b), p. 58, rules (9.4h) and (9.4i) respectively, but with the change in presentation of bars by primes.

derived categories with the same 'hole-indicating' category, namely, N'' . These rules define a structure such as the following, where the category N''/N'' is that which is to dominate a resumptive pronoun, a phonological null element, or an empty string.



To determine the possible realisation of derived categories A/B (or its specified form N''/N''), Gazdar (1980b, pp. 59-60) also employs a set of what he calls "linking rules" whose function is to eliminate such derived categories in the following manner, where \underline{t} is used to indicate a phonologically null dummy element.

(61) $A/B \left[\underline{t} \right]$

'Linking rules' are also used to introduce derived categories, as well as for eliminating them. This introducing function will be demonstrated later.

The machinery of such PS-rules (particularly with derived categories and linking rules) is said to be capable of handling all sorts of English constructions involving unbounded syntactic dependencies. Among these constructions, Gazdar's (1980a) analysis of English restrictive relative clauses will, as far as the limited scope of this study permits, be reviewed below.

According to Gazdar (1980a, pp. 14-17), English (restrictive) relative clauses involve unbounded syntactic dependencies and are introduced into noun phrases by a sentential category represented as R. Having N'' for the most dominating noun phrases (as in the rest of PS-rules of English, given above), this introduction can be demonstrated as follows.

$$(62) \quad N'' \left[\begin{array}{c} N'' \quad R \end{array} \right]$$

The structure of R bears fundamental variations, which can be presented by the following rule schemas. It may be noted that these rules must be accounted for in Gazdar's PS-grammar (introduced above) as linking rules which introduce derived categories V''/N'' and V''/P'' into the structure of relative clauses in (63) and (64), respectively.

$$(63) \quad R \left[\begin{array}{c} (N'') \\ \left[\begin{array}{c} \pm WH \\ +Pro \end{array} \right] \end{array} \right] \quad V''/N''$$

$$(64) \quad R \left[\begin{array}{c} P'' \\ \left[\begin{array}{c} \pm WH \\ +Pro \end{array} \right] \end{array} \right] \quad V''/P''$$

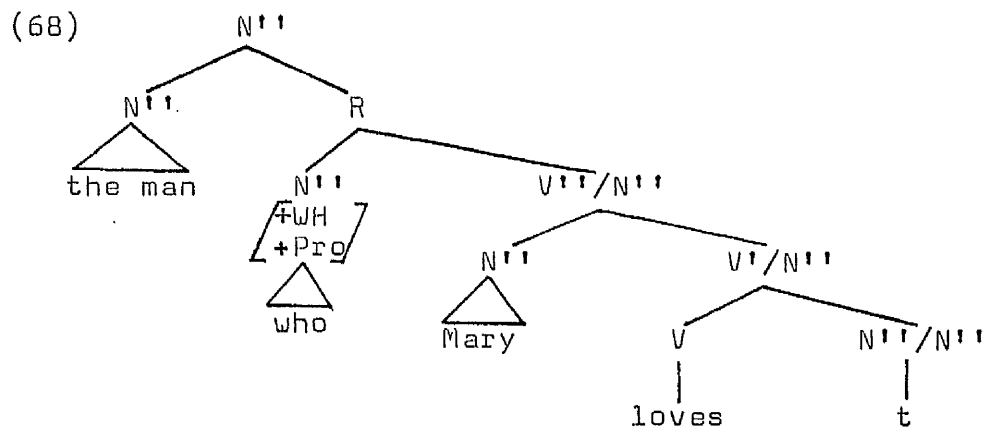
In this view, N''s with $\left[\begin{array}{c} +WH \\ +Pro \end{array} \right]$ features will result in WH-words like 'who', and those with $\left[\begin{array}{c} -WH \\ +Pro \end{array} \right]$ will be 'that'. Accounting for N'' of (63) as an optional constituent of R, the above PS-rules are capable of generating different types of relative clauses simply, as the following.

(65) the man who Mary loves

(66) the man Mary loves

(67) the man with whom Mary talked

To demonstrate this further, the structure of the relative clause in (65) is presented in the following schema.



Here, the derived category N''/N'' must be interpreted as a "hole", with no phonological realization. Given examples (65-67) above and the structure schema in (68), the following quotation summarizes the syntax of relative clauses, and terminates the discussion of Gazdar's reformulation of PS-grammar (for English) here.

"Relative clauses consist of a pronominal NP or PP followed by an S with a hole of the appropriate sort in it."¹

In conclusion, since the syntactic apparatus of PS-grammar introduced above appears to be capable of generating

1. Gazdar (1980a), p. 17.

all noun phrase structures (notably, including those with relative clauses) in a simpler and more elegant way than the familiar transformations, the analyses to be developed in this study are oriented towards a Persian PS-grammar similar to that proposed by Gazdar (1980a,b) for English. But unlike Gazdar's (1980a,b) two level system of PS-rules, this study utilizes, for the reason discussed earlier (in 1.3.2), the X-bar Convention notations in the form proposed by Jackendoff (1977b) that there are for every lexical category X , three hierarchic syntactic categories X' , X'' , and X''' .

To demonstrate the simplicity and plausibility of the analyses proposed for Persian in this study, problems and issues of the following chapters are, where necessary, first approached within the generative-transformational models. Then, after discussing the shortcomings or complexity of transformations in handling the particular problem or issue, they are analysed in the version of PS-grammar developed in this thesis. Finally, the last point to be made is that although, following Gazdar (1980a,b), the PS-rules to be presented for Persian are assumed to capture both familiar 'surface' and 'deep' structures, the term 'surface structure' may however be used to refer specifically to the realization of a particular structure, different from its syntactic structure. Furthermore, in the presentation of PS-rules, parentheses around optional constituents will not be provided (as in Gazdar (1980b)), simply for ease of presentation.

CHAPTER TWO : NOUN PHRASES

2.1 INTRODUCTION

In spite of the widely accepted view that noun phrase is a universal syntactic category in natural languages, it is interesting that linguists still argue, and indeed disagree with each other, over problems concerning the internal structure of noun phrases (henceforth, NPs), even in a widely studied language such as English. Referring to this question in relation to English, Selkirk (1977), for instance, writes that :

"For quite a period of time, however, the internal structure of a category like NP went unstudied, for the simple reason that so few better known transformations were relevant to it."¹

This is not, of course, to say that advances have not been made in understanding the constituency of NPs. On the contrary, numerous studies have been devoted to 'quantifiers', 'adjectives', etc. which together with the head-nouns composes NPs.² The controversy rests upon where each of these minor

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1. Selkirk (1977), pp. 285-286. Following this so-called problem that so few transformations can ever apply on NPs, she (on page 286) further suggests that "The investigator of the noun phrase ... must search for other sorts of arguments in articulating his or her hypothesis about noun phrase structure."
 2. See, for instance, Stockwell, et al (1973).

categories belongs within the internal structure of NPs. This chapter will address itself to the internal structure of NPs in the Persian Language and determine the syntactic relationships between the head-noun and constituents that compose NPs in terms of an 'X-bar' system of PS-rules.

To begin with, a brief survey on nouns, the obligatory elements of NPs, and their traditional classification is presented in 2.1.1, which provides information used later in recognizing different types of NP. Following this, the categories around the head-nouns, referred to as 'NP-modifiers', are the subject of the discussions in 2.1.2. To cover the overall picture of the internal structure of NPs, section 2.2 is devoted to discussions concerning the composition of each particular type of NP. Finally, section 2.3 of the present chapter is given to discussions of demonstratives, the smallest category of NP-modifiers, and their analysis in both traditional and generative grammars. Preceding these sections, a definition for NPs is in order.

Noun phrases¹ are groups of (one or more) words which most typically serve as subject, object, and complement,²

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1. The term 'noun phrase (NP)' in the discussions here is used equally and interchangeably as the term 'nominal (group)' such that 'NP-modifier', for instance, refers to the same syntactic categories as 'nominal modifier' does. The more or less equal and interchangeable use of these two terms 'noun phrase' and 'nominal (group)' is in fact the case in almost all generative studies, as noted by Langacker (1972), p. 194.
 2. See, for instance, Sadeghi and Arzhang (1977), p. 89.

and are, according to the generative models as, for instance, Aspects (1965), generated as deep structure constituents.

The internal structure of NPs consists of either personal pronouns or nouns with or without various types of syntactically dependent constituents.¹ The structural differences of NPs do, therefore, depend upon the particular type of constituent(s) around their head-nouns. Some of these differences are demonstrated in the following examples.

- (1) u injā ni-st
(he) (here) (Neg-is)
'he is not here'
- (2) pesar injā ni-st
(boy)
'the boy is not here'
- (3) un pesar injā ni-st 'that boy is not here'
(that) (boy)
- (4) pesar-e qadboland injā ni-st
(boy) (tall)
'the tall boy is not here'

Unlike the personal pronoun u 'he' in (1), examples of NPs in (2-4) variously consist of the noun pesar 'boy' (in (2)) and both 'prenominal' (in (3)) and 'postnominal' (in (4)) dependent constituents. These constituents around the head-nouns are referred to throughout this study

1. The syntactic and semantic relationship between these dependent constituents and their nuclear nouns are claimed to be the same as those which Auxiliaries bear to Verbs, by Stockwell (1977), p. 55.

as 'modifiers'¹ of NPs (or 'NP-modifier'). Thus, the first point to make is that modifiers are of two types : (1) those which are usually used prenominally, and (2) those which usually occur postnominally. Accordingly, these two types are referred to in the discussions as 'prenominal modifiers' and 'postnominal modifiers' respectively. Discussion of each of these types of modifier will be presented in 2.1.2.

Considering the different types of NPs given in example (1-4) above, those such as u 'he' in (1) with personal pronouns as their head can not normally take NP-modifiers of the types other NPs with common head-nouns can. To clarify this, corresponding to the acceptable NPs in (3) and (4), for instance, the following with the pronoun u 'he' and (prenominal and postnominal) modifiers are ungrammatical.

(5)* un u injā ni-st
(that) (he) (here) (Neg-is)

(6)* u-ye qadboland injā ni-st
(he) (tall) (here)(Neg-is)

As a general rule, NPs with pronouns can not normally have modifiers such as, for instance, un 'that' and qadboland 'tall' in the above examples. This, of course, can be

1. The term 'to modify' and 'modifier' employed in the discussions here are in the sense they have been used in, for instance, Gleason, Jr. (1965). According to his definition (p. 139, fn. 1), "modify" means "'grammatically dependent upon' or 'grammatically subordinate to'."

explained by the semantic principles that pronouns, since they are used as substitutes for NPs already mentioned or familiar, are modified by virtue of their reference and need no other modifier to stipulate their meanings. However, because of the fact that pronouns do not usually take modifiers and also that the problem of Persian pronouns (of different sorts and forms)¹ is itself a separate issue of comparatively large proportions which exceeds the scope of the present study, discussions in this chapter are devoted exclusively to those types of NPs whose internal structure comprises head-nouns with or without NP-modifiers.

2.1.1 Nouns

Since nouns are obligatory elements of NPs, this subsection will present a brief survey on Persian nouns and their typical characteristics. This survey consists of a general definition followed by a short review of traditional classifications of Persian nouns, which provide some information for analysing the syntactic structure of NPs (in section 2.2) as follows.

2.1.1a Definition

As is the case with any other category, definitions presented for the category of nouns in Persian are of

1. For a full, but short, survey on Persian pronouns, see Azadi-Ardakani (1970), pp. 37-46.

different types. Among them, very common definitions are those based on the semantic functions of nouns. Those types of definition can be found in almost all traditional grammars dealing with 'parts of speech'. According to them, "nouns are words which are used to name persons, animals, or things."¹

Apart from this type of definition, nouns are also defined on the basis of their syntactic functions and, more often, morphological characteristics.² On morphological grounds, nouns are distinguished as those words which can commonly take certain inflectional suffixes. Examples of such suffixes for Persian nouns are -hā, the plural morpheme; -i, the indefinite marker; and -e, the linking morpheme for postnominal modifiers (like adjectives). Each of such distinguishing suffixes will be discussed later. For the present, to clarify the attachment of these suffixes to nouns, some examples are presented below.

- | | | |
|------|--|---------------------------|
| (7a) | xune
(house) | 'house' |
| (7b) | xune- <u>hā</u> | 'houses' |
| (7c) | xune- <u>hā</u> - <u>?i</u> | 'houses' (indefinite) |
| (7d) | xune- <u>hā</u> - <u>ye</u> bozorg
(big) | 'big houses' (definite) |
| (7e) | xune- <u>hā</u> - <u>ye</u> bozorg- <u>i</u> | 'big houses' (indefinite) |

1. Gharib et al (1950a), p. 20. (Translation is my own).

See also Khanlari (1973), p. 46.

2. For such discussions of Persian nouns, see, for instance, Sadeghi and Arzhang (1977), pp. 89-90.

According to syntactic characteristics, nouns can generally be defined as those which typically function as the head of NPs and can take various modifiers.¹ Thus, to present a specific definition and recognition of Persian nouns does, in fact, require the determination of the types of modifiers with which nouns can commonly cooccur.² This, among other reasons, motivates the study of Persian NP-modifiers to be presented in 2.1.2.

2.1.1b Singularity/Plurality

The present subsection examines one of the morphological characteristics of nouns (mentioned earlier) that is, their status of singularity and plurality, and further elaborates a systematic way of predicting them in this study.

The principal system of Number for nouns in Persian comprises two possibilities : a noun can either be singular or plural. Each of the two forms (ie, singular and plural) has, of course, its own variations. The plural form, for instance, is of two types 'generic' and 'non-generic'; these differ from one another in both meaning and formation.³ In general, plural nouns are formed from the singular forms,

-
1. some grammarians have made attempts to present definitions based on almost all (semantic, syntactic and morphological) aspects of nouns. For such definitions, see, for instance, Lyons (1977b), p. 425.
 2. Sadeghi and Arzhang (1977), pp. 89-90.
 3. Mo'in (1962), pp. 8-12.

that is the lexical entries, and plural morphemes. Plural morphemes usually indicate more than one of whatever the noun denotes, unless the noun in question is of the type Mass noun, in which case they (ie, plural morphemes) indicate a relatively large quantity of whatever the Mass noun refers to. For instance, the noun ketāb-hā 'books' in a sentence such as (8) indicates that the number of books in question is more than one; whereas, qazā-hā 'foods' in sentences like (9) usually refers to a relatively large quantity of foods.

- (8) in ketāb-hā māle ki -ye ?
 (this) (books) (Poss) (who) (is)

'whose are these books'

- (9) qazā-hā -ro tu yaxcāl bezār
 (foods) (DO) (in) (fridge) (put)

'put the foods into the fridge'

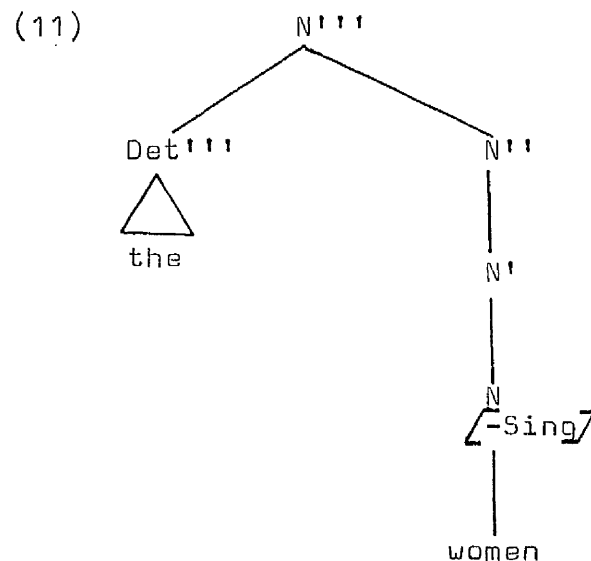
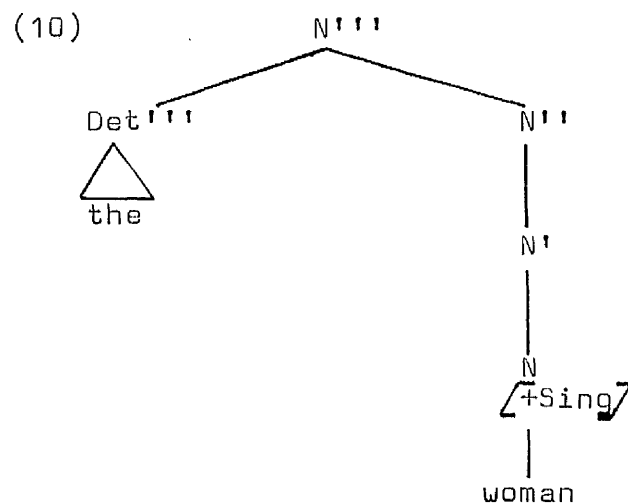
The singular or plural form of nouns is indicated in generative models such as Aspects (1965) by a set of syntactic features associated with the choice of noun,¹ which must also be assigned to their articles in the way described below.

"... the grammar must contain agreement rules that assign to the Article all of the feature specifications for [Gender], [Number], and [Case] of the Noun it modifies."²

1. See Chomsky (1965), pp. 170-175.

2. Chomsky (1965), pp. 174-175.

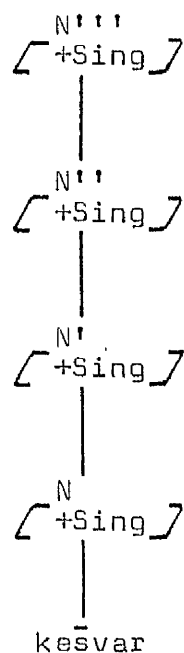
In line with other binary features of nouns, such syntactic features for number can be as $[+Singular]$ for singular nouns and $[-Singular]$ for plural nouns. Having these, the difference between two syntactically similar NPs such as 'the woman' and 'the women' can be demonstrated in their structures as (in terms of the X-bar Convention) the following (10) and (11) respectively.



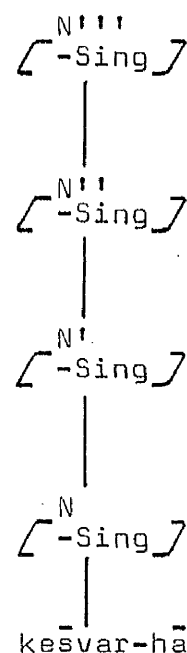
In the PS-rules utilized here, however, since features of

nouns are directly copied from their dominating NPs (according to the HFC principle, introduced in 1.3.3), features such as $\left[\pm \text{Singular} \right]$ must be dealt with as syntactic factors which significantly affect the (syntactic) formation of NPs. Thus, singular nouns differ from plural nouns not only in their morphological forms and meanings but also in the syntactic type of their dominating NPs. Singular nouns are dominated by $\left[+\text{Singular} \right]$ NPs, and plural nouns by $\left[-\text{Singular} \right]$ NPs. These relationships for nouns are demonstrated below by the example of keṣvar 'country' and its plural form keṣvar-hā 'countries'.

(12a)



(12b)



Since the feature $\left[+\text{Singular} \right]$ does not require a specific syntactic structure or an addition of extra morphemes to the stem of words in morphology, the following discussions are devoted primarily to $\left[-\text{Singular} \right]$ NPs with plural head-nouns.

As the head of $\left[\text{-Singular} \right]$ NPs, plural nouns have two types of structures. They are either marked by plural morphemes (discussed below) which attach to the end of nouns, or are preceded by quantifiers (including numerals) of $\left[\text{-Singular} \right]$ category.¹ These two markers of plurality, ie, the plural suffixes and $\left[\text{-Singular} \right]$ quantifiers are mutually exclusive. To clarify this, consider some examples of $\left[\text{-Singular} \right]$ NPs as follows.

- (13) $\frac{\text{ketāb-hā}}{(\text{books})}$ ru miz -e
(on)(table)(is)
'the books are on the table'

- (14) $\frac{\text{cānd ketāb}}{(\text{some})(\text{book})}$ ru miz -e
'some books are on the table'

- (15) $\frac{\text{se ketāb}}{(\text{three})(\text{book})}$ ru miz -e
'three books are on the table'

- (16)* $\frac{\text{cānd ketāb-hā}}{(\text{some})(\text{books})}$ ru miz -e

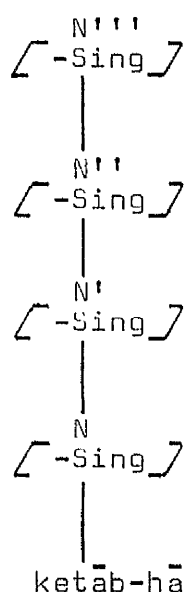
- (17)* $\frac{\text{se ketāb-hā}}{(\text{three})(\text{books})}$ ru miz -e

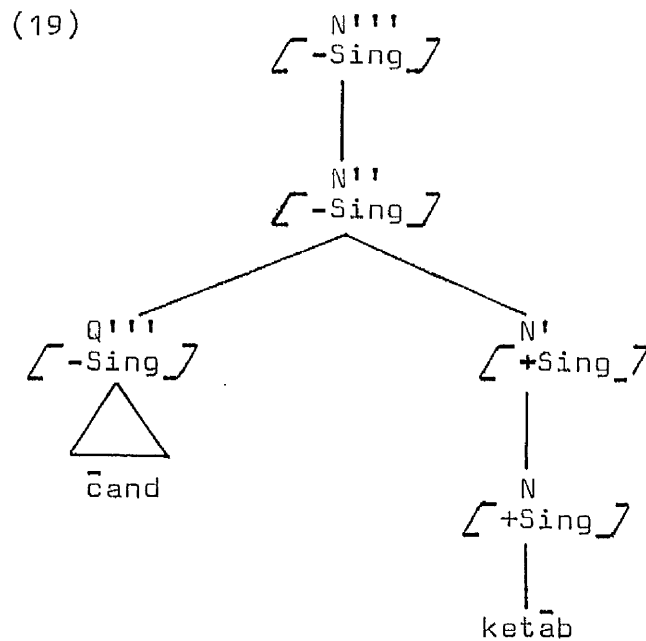
The head-nouns of NPs in the examples above are variously marked as plural : by the plural morpheme -hā in (13), the quantifier cānd 'some' in (14), the numeral se 'three' in (15), and both the plural morpheme -hā and quantifiers cānd 'some' and se 'three' in (16) and (17) respectively. Among these, $\left[\text{-Singular} \right]$ NPs in (16) and (17) which are

1. Beheshti (1976), pp. 163-165.

double-marked (by both the plural morpheme and quantifiers), are not grammatical. To rule out such ungrammaticalities as in (16) and (17), the rule assigning plural suffixes to nouns with $\left[-\text{Singular} \right]$ feature can be assumed to be constrained so that they add no plural morphemes to the nouns if they are preceded by quantifiers. As an alternative to this, the two types of the formation of $\left[-\text{Singular} \right]$ NPs can be accounted for by two separate PS-rules of NPs : one generating $\left[-\text{Singular} \right]$ nouns, and the other $\left[+\text{Singular} \right]$ nouns preceded by quantifiers of the type $\left[-\text{Singular} \right]$. In other words, the feature $\left[-\text{Singular} \right]$ of NPs must be carried over by quantifiers (as their specifiers), if there are any; otherwise by head-nouns. Such cases for the transfer of the feature $\left[-\text{Singular} \right]$ from NPs to their dominated constituents can be demonstrated by the following structures (18) and (19), corresponding to the examples in (13) and (14) above, respectively.

(18)





Proposing such conditions for head-feature copying of NPs is, of course, compatible with the extension of the HFC principle (introduced in 1.3.3) and has the benefit of simpler morphological rules, since there is no need to constrain the addition of plural morpheme to $[-\text{Singular}]$ nouns if preceded by quantifiers. Such feature copying conditions simply guarantee the acceptable addition of plural morphemes to nouns marked as $[-\text{Singular}]$, and also rule out the formation of unacceptable $[-\text{Singular}]$ NPs such as (16) and (17) above with both $[-\text{Singular}]$ quantifiers and $[-\text{Singular}]$ head-nouns (by the structure schema in (19)).

Following the application of morphological rules to assign plural morphemes to the head-nouns of $[-\text{Singular}]$ NPs, a brief survey of Persian plural morphemes needs to be presented, as follows.

Plural morphemes in Persian are of various types. The most common of these, used in the spoken form of the language for almost all types of nouns, is the suffix -hā.¹ Examples are zan-hā 'women', ketāb-hā 'books', roqan-hā 'oil(s)', etc. from the singular form zan 'woman', ketāb 'book', and roqan 'oil' and the suffix -hā. In the very colloquial form of the language, the suffix -hā is frequently pronounced simply as -ā when added to nouns ending on a consonant. Thus, the plural noun pesar-hā 'boys', for instance, can also be pronounced as pesar-ā 'boys'.²

The second most common form of the plural morpheme is the suffix -ān which is usually added to nouns denoting animate beings.³ Examples are mard-ān 'men' and zan-ān 'women' from the singular form mard 'man' and zan 'woman' respectively. As an alternative, the suffix -hā (discussed above) can always be used instead of -ān for animate beings, as well as for inanimate objects. Thus, for instance, the plural form of mard 'man' and zan 'woman' can freely be formed both as mard-ān 'men' and zan-ān 'women' and mard-hā 'men' and zan-hā 'women' respectively. There is, in fact, a trend in spoken Persian to employ -hā as the plural suffix

1. Boyle (1966), pp. 19-20.

2. However, the use of the suffix -ā instead of -hā is not a regular pattern for all speakers of Persian and, moreover, is not used by a certain speaker in all instances of plurals. For this reason, this suffix in all examples throughout the thesis is consistently presented as -hā.

3. Sadeghi and Arzhang (1977), p. 122.

in as many cases as possible.¹ For this reason, all examples of plural nouns in the following sections and chapters are given with the suffix -hā as the plural.

Besides the two suffixes -hā and -ān, zero, Ø, must also be considered as an allomorph of the plural morpheme which is required for the plurals of nouns in the generic sense, where they refer to classes of (one or more) entities, and also to 'group-words' which denote groups of individuals.² Examples of such cases are ketāb 'book(s)' and mardom 'people' in the following sentences.

- (20) ketāb behtarin dust-e ādam -e
 (book)(best) (friend-of) (man) (is)
 'books are man's best friend'

- (21) mardom az u bizār-and
 (people) (from) (he) (hate-they)
 'people hate him'

In the sentences above, the noun ketāb 'book(s)' is used in the generic sense referring to the class of books in general; and mardom 'people' denotes, in more or less the same way, groups of individuals. More examples of the type mardom 'people' are those such as goruh 'group', jamʔiyat 'crowd'. These nouns do, however, also accept the

1. See Khayyampour (1955), p. 25. This is, perhaps, partly because -hā can in many circumstances be simplified to -ā and this makes great simplicity in the production of speech.

2. Kian (1978), p. 23.

plural morphemes, and appear as mardom-hā 'groups of people', goruh-hā 'groups' and jamʔiyat-hā 'crowds', respectively.

A proof of plurality is that both forms of such plurals (ie, with and without -hā) must take verbs with plural endings.

An example of the verb-agreement of these plurals is presented below.

- (22) goruh-i ānjā bud-and
 (group) (there) (were-they)

'a group (of people) was there'

- (23) goruh-hā-ʔi ānjā bud-and

'some groups were there'

Loan-words from Arabic have in many cases retained their original plural forms. Examples of these are -in in mohassel-in 'students' (from the singular mohassel 'student'); -(y)un in ruhāni-yun 'clergy' (from ruhāni 'clergyman'), and -āt in entexābāt 'elections' (from entexāb 'choice, election').¹ There are also a number of originally Arabic plural forms still used in Persian which are formed by a systematic change of their singular forms.² Examples of such plurals are ʔolum 'sciences' (from the singular ʔelm 'science', knowledge') and rofaqā 'friends' (from the singular rafiq 'friend'). However, foreign plurals can in most cases be replaced by the regular Persian plural forms,³ though they

1. See Sadeghi and Arzhang (1977), pp. 123-124.

2. For a detailed list of such plurals, see Khanlari (1973), pp. 56-58.

3. See Boyle (1966), p. 20.

may indicate different meanings from the original ones. The Arabic plural noun mohassel-in 'students', for instance, is used side by side with mohassel-hā 'students' (with the Persian plural suffix -hā), both with exactly the same meaning, whereas, entexāb-hā 'choices', the Persian counterpart of the Arabic plural form entexāb-āt 'elections', does usually have a different meaning from the original form.

Leaving out such semantic differences between two plural forms of the same singular (as entexāb-āt 'elections' and entexāb-hā 'choices'), the usual evolution of the Persian Language, like English, as expressed by Christophersen and Sandved (1969) quoted below, is to replace all foreign plurals with those of Persian origin.

"... the natural tendency of the language is to get rid of these foreign plurals, and to form the plurals of the loan-words in the regular way."¹

Thus, such a natural tendency in Persian seems to be the fundamental reason for, sometimes, using two plurals corresponding to each singular form of loan-words, in particular, Arabic. The limited scope for discussion of plural morphemes of Persian does not permit further investigation into this matter.

2.1.1c Classification

Since the distinguishing syntactic features of nouns

1. Christophersen and Sandved (1969), p. 22.

are, according to the HFC (introduced in 1.3.3), the same as those of their dominating NPs, a general classification of nouns correlates with that of NPs. Following the syntactic definition of nouns (given in 2.1.1a), such classification would have to be based on the cooccurrences of head-nouns and various types of NP-modifiers. These cooccurrences have certainly much to do with the semantics of nouns, for different semantic classes of nouns exhibit different behaviours, and also different members of the same semantic class of nouns have similar behaviour in accepting modifications. Thus, semantic classes of nouns predict syntactic structures of their corresponding NPs, and vice versa.¹ In different words, syntactic structures of NPs, in the analysis presented in this study, are in close correlation with the semantics of their head-nouns. To clarify the matter, consider some of the distinguishing semantic classes of nouns and their characteristics, as presented below.

The first classification of nouns distinguishes two general classes : 'proper' and 'common'² to contrast between specific and unspecific members of the sets to

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1. In relation to such cases in correlation with the semantically based traditional classification and semantic structure of categories like nouns, Gleason, Jr.(1965), p.133, writes that : "A part of the new insights of the linguists can be incorporated into the framework of traditional grammar through subclassification."
 2. Khanlari (1973), pp. 47-48.

which nouns refer.¹ Thus, the two classes can be distinguished as follows.

(1) Proper nouns are those which refer to specific persons, things, and places.² These nouns are such as ferdosi 'Ferdosi', qorʔān 'Qoran', tehrān 'Tehran', and ʔirān 'Iran' in the following examples.

- (24) ferdosi sāʔer -e bozorg-i -ye
 (Ferdosi) (poet) (great) (is)

'Ferdosi is a great poet'

- (25) qorʔān ketāb-i -st āsemāni
 (Qoran) (book) (is)(holy)

'The Qoran is a holy book'

- (26) pāyetaxt-e ʔirān tehrān -e
 (capital-of)(Iran) (Tehran)(is)

'the capital of Iran is Tehran'

In these examples, ferdosi 'Ferdosi' refers to a specific person, qorʔān 'Qoran' to a specific book, and tehrān 'Tehran' and ʔirān 'Iran' to specific places, such

1. Gleason, Jr.(1965), p. 134, states that the existence of such classification of nouns into the 'proper' and 'common' classes in English, is due, among other reasons, to "... the importance of the distinction for the conventions of capitalization.", such that English proper nouns must conventionally be written with initial capital letters. Such a convention, however, is not the case for written Persian.

2. See Gharib et al (1950a), pp. 20-21.

that their reference, as Sadeghi and Arzhang (1977, pp. 90-91) point out, is definite to the speaker and hearer of Persian. These nouns do not usually take any type of modifier (discussed in 2.1.2), except appositive relative clauses (see 5.2.1b). For instance, the three proper nouns ferdosi 'Ferdosi', qor?ān 'Qoran' and ?irān 'Iran' of the examples above can not be used with, say, har 'every, each', the prenominal modifier of the type quantifier, as illustrated below.

(27)* har ferdosi šā?er-e bozorg-i -ye

(28)* har qor?ān ketāb-i -st āsemāni

(29)* pāyetaxt-e har ?irān tehrān -e

Proper nouns can not usually take the plural morpheme either. As an example, consider the following ungrammatical plurals corresponding to the examples in (24-26) above.

(30)* ferdosi-hā šā?er-hā-ye bozorg-i -yand
(Ferdosi-s) (poets) (great) (are)

(31)* qor?ān-hā ketāb-hā-?i hastand āsemāni
(Qoran-s) (books) (are) (holy)

(32)* pāyetaxt-hā-ye ?irān-hā tehrān-hā hastand
(capitals-of) (Iran-s) (Tehran-s)(are)

In the spoken form of Persian, however, proper nouns may rarely be used in plural form to refer to the sets (of entities) whose members have more or less the same properties

as the proper noun itself has.¹ For instance, the plural proper noun ferdosi-hā may be used in colloquial language only to refer to a group of poets whose distinguishing characteristics are, in some ways, like those of ferdosi 'Ferdosi' himself.² A typical example of such cases is the following :

- (33) tārix-e ?irān āyatollā-hā-ye ziyādi
 (history-of) (Iran) (āyatollah-s) (many)
 be-xod dide
 (with itself) (seen)

' Persian history has seen many
 ayatollahs' (there have been too
 many like ayatollah in Persian
 History)

(2) Unlike proper nouns, common nouns refer to unspecific persons, things, and places. Thus, nouns such as sā?er 'poet' in the sentence (24), ketāb 'book' in (25), and pāyetaxt 'capital' in (26), for instance, are common nouns referring to unspecific entities of the three different sets whose corresponding specific members are ferdosi

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1. Referring to the uncommon pluralization of proper nouns in Persian, Gharib et al (1950a), p. 21, believe that this is not a Persian phenomenon, but is imitated from European languages. They, however, do not specify which of the European language is the source.
 2. In such cases, it is clear that proper nouns function as common nouns and, thus, can accept any type of suffix or modifier which common nouns take.

'Ferdosi', qorʔān 'Qoran', and tehrān 'Tehran', respectively.

Common nouns, unlike proper nouns, can usually accept all types of modification (by NP-modifiers). As an example, consider the modification of common nouns sāʔer 'poet' and nevisande 'writer' by the adjective xub 'good' and bozorg 'great, big' in the following sentences.

- (34) sāʔer-hā -ye bozorg maʔmulan nevisande-hā-ye
 (poets) (great)(usually)(writers)
 xub-i (ham) hastand
 (good)(also) (are)
 'great poets are usually good
 writers (too)'

Common nouns are of two subclasses 'count' and 'mass', according to the status of their reference to different entities. A general definition for these subclasses can be presented as follows.

"In general count nouns refer to discrete, individual objects; mass nouns to substances, quantities and the like."¹

The two subclasses of count and mass nouns also exhibit different behaviours when modified by, for instance, quantifiers. Count nouns can usually take all types of quantifier; whereas, mass nouns can not take quantifiers such as har 'every, each' and numerals, which in the cognitive sense, refer to individuals of the sets (of entities). Examples for such differences between count and mass nouns

1. Gleason, Jr.(1965), p. 137.

are demonstrated by the nouns pesar 'boy' and šekar 'sugar', and quantifiers har 'every, each' and do 'two' in the following phrases.

(35a) har pesar 'each boy'
(each) (boy)

(36a)* har šekar
(each) (sugar)

(35b) do pesar 'two boys'
(two)

(36b)* do šekar

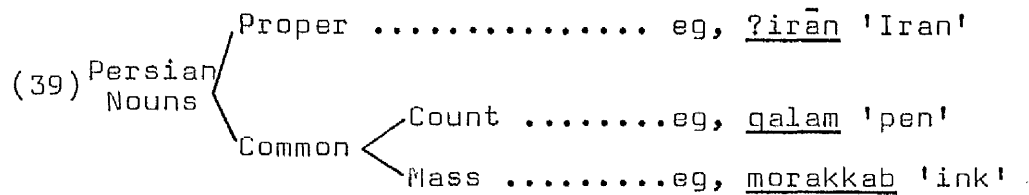
As a typical characteristic of Persian, both count and mass nouns can, however, accept the plural morpheme. This is very common in the spoken language. Examples of such plural mass nouns are āb-hā 'water(s)' (from the singular āb 'water') and šekar-hā 'sugar(s)' (from the singular šekar 'sugar') in the following sentences.

(37) movāzeb bās āb-hā -ro nariz-i
(careful)(be) (waters) -DU (Neg-spill-you)
'be careful not to spill the water'

(38) šekar-hā -š tahnešin šode
(sugars) (it)(sediment)(became)
'its sugar has remained at the bottom'

More examples of plural forms of mass nouns are :
ārd-hā 'flour(s)' (from the singular ārd 'flour'), andarz-hā 'advice(s)' (from andarz 'advice'), and pārce-hā 'materials (of clothes)' (from pārce 'material').

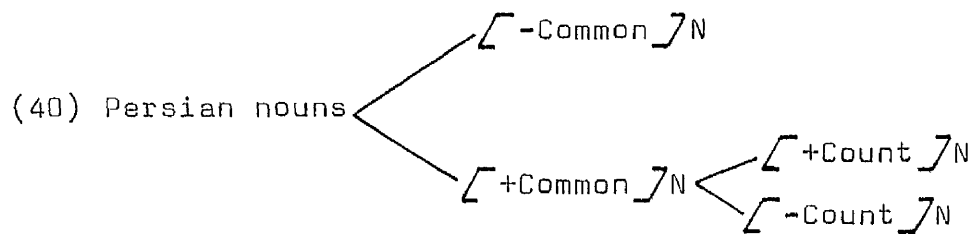
Count and mass nouns can further be divided into different types, according to the nature of the entities to which they refer.¹ Since such divisions of count and mass nouns do not bear a significant role in determining the acceptance of NP-modifiers (discussed in 2.1.2), discussions of classification will be terminated here by presenting a diagram which exhibits classes and subclasses so far distinguished for the category of noun, as follows.²



In the discussion that follows in the next sections, reference will be made to the above-mentioned different classes and subclasses of noun by a set of binary features which will also be used in determining the internal structure of NPs (in section 2.2). In line with other binary features of the proposed grammar, the two classes of common and proper nouns will therefore be referred to as those distinguished by $[+Common]$ and $[-Common]$ features respectively. Similarly, the two subclasses count and mass are distinguished by $[+Count]$ and $[-Count]$ features respectively. Employing these binary features, diagram (40) below demonstrates the classification of Persian nouns.

1. Khanlari (1973), pp. 49-50.

2. A similar diagram is given by Quirk et al (1972), p.129, for the classification of English nouns.



Since these features are in hierarchical order in relation to each other, only the last feature needs to be specified and the other features will be automatically predicted by general redundancy rules. For instance, marking a noun, or in fact an NP (as discussed in 2.2), with the $[-\text{Count}]$ feature, will predict that noun, or the NP, is of the type $[+\text{Common}]$.

2.1.2 NP-modifiers

As well as the obligatory head-noun, NPs in Persian can have optional prenominal ^{and postnominal} modifiers (mentioned in 2.1), each of which can be prenominal ^{and postnominal} modifiers (mentioned in 2.1), is intended to prenominal ^{and postnominal} modifiers (mentioned in 2.1), Further discussion of each type and, in particular, of their syntactic structures, is left to separate sections and chapters. The present section is thus divided into three parts. The first part is devoted to introducing prenominal modifiers. Since postnominal modifiers always take linking morphemes to follow their head-nouns, the second part of this section is concerned with linking morphemes. Finally, the third part introduces postnominal modifiers.

2.1.2a Prenominal Modifiers

Prenominal modifiers fall into three categories.¹ The first category consists of demonstratives (D). The most commonly used demonstratives are in 'this' and ān 'that', as in the following NPs.

(41) in otāq 'this room'
 (this)(room)

(42) ān mard 'that man'
 (that)(man)

The demonstrative ān 'that' is usually pronounced in the spoken language as un 'that'. Since this study is based primarily on spoken Persian, this demonstrative and its derivational forms will be referred to as un 'that', throughout. The most typical characteristic of demonstratives is that they precede **all** other types of prenominal modifiers. This fact and other distinguishing characteristics of demonstratives are the subject of the discussion in 2.3.

The second category of prenominal modifiers is that of quantifiers (Q). This category comprises words such as čand 'some', and numerals like se 'three', as in the following.

(43) čand nafar 'some person'
 (some) (person)

(44) se doxtar 'three girls'
 (three) (girl)

1. For a full details of all possible prenominal modifiers in Persian see Bateni (1969), pp. 117-118.

The interesting point about these types of pronominal modifiers is that most quantifiers (excluding numerals) function exactly like nouns. This point and also the syntax of each particular type of quantifier are the subject of chapter four.

Finally, the third category of pronominal modifiers consists of superlative adjectives (A). These forms of adjective, since they are different in syntax and differ somewhat in morphology and semantics from other types of adjective (ie, the simple and comparative), are accounted for in the PS-grammar as a type of pronominal modifier, syntactically independent from those postnominal adjectives. This point, among many other equally important points about adjectives, will be considered in chapter three. For the present, consider some examples of pronominal adjectives, as follows.

(45) behtarin qazā 'the best food'
 (best) (food)

(46) zerangtarin sāgerd
 (most clever) (student)
 'the most clever student'

Among the above-mentioned categories of pronominal modifiers, demonstratives and quantifiers can cooccur to modify the same head-noun. For instance, the demonstrative un 'that' and do 'two', the numeral type of quantifier, can occur in the same NP and result in the following construction.

- (47) un do nafar 'those two persons'
 (that) (two) (person)

NP-constructions like (47) with the cooccurrence of demonstratives and quantifiers, both as prenominal modifiers for the same head-noun, provide significant evidence that demonstratives, in the hierarchy of categories (see 1.3), belong to a higher syntactic level within NPs than quantifiers. These observations will be used later in discussing the syntactic structure of demonstratives and quantifiers.

2.1.2b Linking Morphemes

In the consideration of NP-modifiers, among the major constituents are the linking morphemes which are usually attached to head-nouns followed by postnominal modifiers, unless they (ie, the postnominal modifiers) are of the type appositive, such as appositive relative clauses (discussed in chapter five). These linking morphemes are the subject of discussion below.

Linking morphemes differ according to the type of their following (postnominal) modifier. In cases of postnominal adjectives, for instance, the linking morpheme appears as -e,¹ and has the form /-ye/ as its allomorph if added to

1. The linking morpheme -e used in Modern Persian is considered to be the standard form of the relative pronoun yo 'who, which' in the Avestan Language. See, for instance, Tisdall (1959), p. 21.

Such an analysis demonstrated by (51) sufficiently predicts all and only occurrences of -e as the linking morpheme for adjectives. This is certainly simpler than introducing -e by some sort of insertion transformational rules to NPs with postnominal modifiers like adjectives. To clarify this, the insertion transformations needed for NPs with postnominal adjectives would be in the following form.

(52) -e Insertion

SD :	X	\int	N	A	\int	Z	
		NP			NP		
	1		2	3	4		<u>Oblig.</u> →
SC :	1		2+e	3	4		

Comparing the two different analyses of the linking morphemes illustrated by (51) and (52), notice that the base-generated status of -e can, in spite of its simplicity, explain all cases of NPs with linking morphemes that insertion transformations produce. However, it may be the case that the analysis illustrated by the schema (51) treats linking morphemes as base constituents with the same syntactic value and relationship as other modifiers such as adjectives bear to head-nouns. Such equal treatment for linking morphemes and modifiers is certainly incorrect. For instance, different types of modifier can optionally cooccur with head-nouns; but linking morphemes can not be added to the head-nouns unless followed by postnominal modifiers like adjectives, for example. In

other words, there seems to be a closer relationship between linking morphemes and their (postnominal) modifiers than between linking morphemes and head-nouns. Such rather different relationships between linking morphemes and postnominal modifiers on the one hand, and linking morphemes and head-nouns on the other, is not reflected in the base-generated analysis of -e demonstrated in (51) above.

One way out of this is to employ two separate PS-rules, one of which is to generate the linking morpheme -e together with the postnominal adjectives. Such separate base rules can be in the form presented below.

$$(53) \quad N' \left[\begin{array}{c} N \end{array} \right]$$

$$(54) \quad N' \left[\begin{array}{c} N \quad -e \quad A' \end{array} \right]$$

The rule schema (54) correctly predicts that the linking morpheme -e can only be used in the NPs if followed by postnominal adjective phrases.

Apart from postnominal adjectives, possessive constructions also require a linking morpheme -e to follow their head-nouns. To clarify possessives, some examples are given below.

$$(55) \quad \begin{array}{lll} \text{ketāb} & \underline{-e} \quad \text{ali} & \text{'Ali's book'} \\ \text{(book)} & \text{(of)(Ali)} & \end{array}$$

$$(56) \quad \begin{array}{lll} \text{xune} & \underline{-ye} \quad \text{man} & \text{'my house'} \\ \text{(house)} & \text{(of)(I)} & \end{array}$$

- (57) jeld -e ketāb
 (cover)(of)(book)
 'the cover of the book'

- (58) pāye -ye miz
 (leg)(of)(table)
 'the leg of the table'

In line with the base-generation of the linking morpheme -e for adjective phrases (illustrated by the rule schema (54) above), possessive constructions such as (55-58) can all have their structure similar to that demonstrated by the following schema, in which the phrasal node "Poss" must be replaced by NPs functioning as possessive elements.

- (59)
- ```

 NP
 / | \
 N e Poss

```

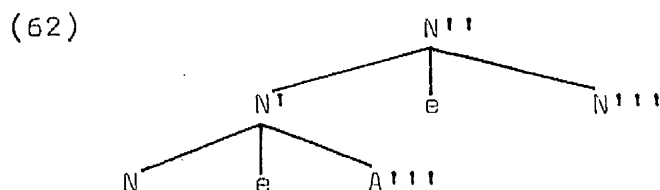
To determine the particular category of NPs (out of the available N''', N'', and N' of Persian) which can dominate "Poss" in (59), note that the possessive element can also cooccur with adjectives, as in the examples below.

- (60) dust-e xub -e man  
 (friend)(good)(of)(I)  
 'my good friend'

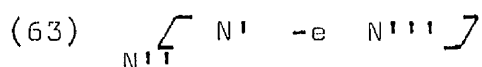
- (61) lebās-e qašang -e minā  
 (dress)(pretty)(of)(Mina)  
 'Mina's pretty dress'

Assuming, for the present, that adjectives are N'-complements, the cooccurrence of adjectives and possessive

elements in (60-61) above simply demonstrates that possessive elements belong to N'' level. This fact can also be shown by the following structure schema, in which both A''' and the possessive element N''' have -e to follow the head of their dominating NPs.



Given such configurations, the PS-rules assigning linking morphemes in possessive constructions must therefore be in the form presented below.



Notice that the linking morpheme required for possessive constructions is in the same form in surface structure as that for postnominal adjectives. This similarity can easily be seen in examples like (60-61) above. However, the linking morphemes of (postnominal) adjectives and possessive constructions differ in that the former belong to N' (as shown by (54) above) but the latter to N'' (demonstrated in (63)). For the sake of argument, these morphemes will be referred to as 'adjectival -e' and 'possessive -e' respectively.

Surface structure similarities of the kind just mentioned between the two types of linking morpheme (ie,

adjectival -e and possessive -e) have led traditional grammarians to consider -e (called "Kasre-ye Ezafe" or simply as "Ezafe")<sup>1</sup> as being variously of three (eg, Elwell-Sutton (1963, pp.41-42)), five (eg, Gharib et al (1950a, p.41)), and even seven (eg, Kian (1978, pp.30-31)) types. These divisions of the linking morpheme -e are, of course, as one would expect from traditional grammarians, based entirely on the meanings of NP-constructions with postnominal modifiers. Considering the syntactic structure of these three, five, and seven types of NP-constructions with -e, they all fall, in fact, into the two types of structure referred to previously, namely as those with adjectival -e and possessive -e. To clarify this, some of the most typical types of -e in traditional grammars are listed below.

- I. Ezafe-ye Melki 'possessive Ezafe' - is an -e used for possessive cases<sup>2</sup> such as ketāb-e man 'my book' where "the modifier is the owner of the modified noun."<sup>3</sup>
- II. Ezafe-ye Bayāni 'explanatory Ezafe' - is an -e used for adjectival constructions such as angōstar-e talā 'golden ring', where the modifier is an adjective.<sup>4</sup>

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1. See particularly Lambton (1953), and Gharib et al (1950a).

2. See, for instance, Boyle (1966), p. 18.

3. Kian (1978), p. 30. (Translation is my own)

4. See, for instance, Mace (1962), pp. 19-20.

III. Ezafe-ye Este'āri 'metaphorical Ezafe'- is an -e used for a type of possessive construction where the possessive element (that is, the modifier) and the head-noun are both used in metaphorical senses.<sup>1</sup> Examples for such constructions are dast-e ruzeqār 'destiny' (from dast 'hand', the linking morpheme -e, and ruzeqār 'world').

These three (typical) above-mentioned types of Ezafe discussed in traditional grammars for the linking morpheme -e are, as mentioned earlier, actually of two syntactic types distinguished previously as the adjectival -e and possessive -e. Type I (that is, Ezafe-ye Melki 'possessive Ezafe') is simply the possessive -e used in possessive constructions. Type II (that is Ezafe-ye Bayāni 'explanatory Ezafe') is the adjectival -e which attaches to head-nouns if followed by adjectives. Finally, type III (that is Ezafe-ye Este'āri 'metaphorical Ezafe'), which occurs as the linking morpheme in possessive constructions with metaphorical meanings, is also the possessive -e in special cases of possessive which requires particular semantic interpretation rules. Such semantic rules are not the concern of this thesis. Instead, notice that NP-constructions with type III linking morphemes exhibit syntactic characteristics exactly like those of ordinary possessives (with the possessive -e). For instance, the head-noun of both semantic types of possessives can be further modified by adjectives, relative clauses, etc. Examples of such possessives with

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1. See, for instance, Gharib et al (1950a), p. 43.

adjectives are given below.

(64a) kolāh -e man 'my hat'  
(hat) (of) (I)

(65a) dast -e ruzegār 'destiny'  
(hand) (of) (world)

(64b) kolāh -e xub -e man 'my good hat'  
(good)

(65b) dast -e bad -e ruzegār 'bad destiny'  
(bad)

The two possessive constructions in (64) and (65) are syntactically similar (with the possessive -e), though they require different semantic interpretations.

The surface structure similarities between the adjectival -e and possessive -e can produce serious ambiguities in phrases such as the following.

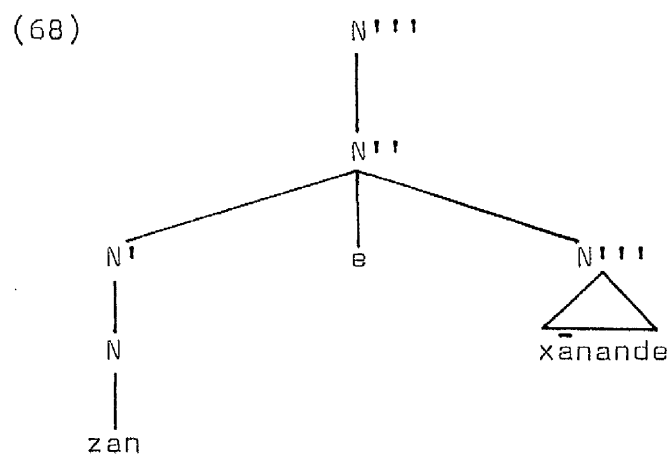
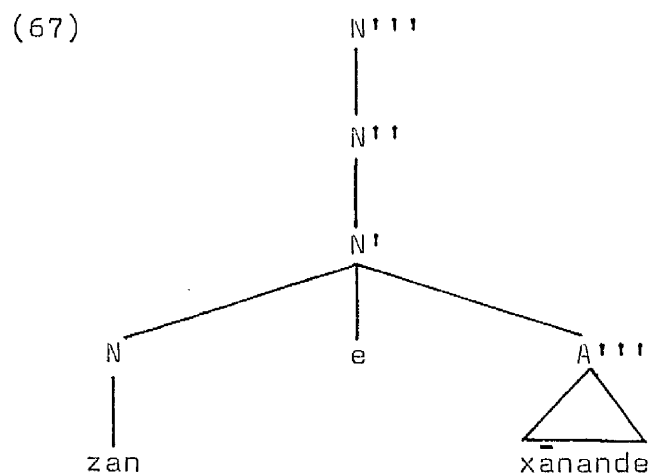
(66) zan -e xānande  
(woman/wife) (singer)  
1. 'the woman-singer'  
2. 'the singer's wife'

The ambiguity of phrases such as (66) is, of course, due to the lexical ambiguity of the head-noun zan as both 'woman' and 'wife', as well as to the surface structure similarities of the -e linking morphemes.<sup>1</sup> Referring to rules (54) and (63) for the base-generation of the adjectival -e and possessive -e respectively, the two interpre-

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1. See Vajdi (1976), pp. 63-65.

tations associated with the ambiguity of the NP in (66) can be demonstrated by two different structures, (67) and (68) below.



Such structures as (67) with the adjectival -e and (68) with the possessive -e also reveal the occurrences of forms such as xānande 'singer' as both a noun (in (68)) and an adjective (in (67)) as another factor of this sort of ambiguity. To clarify this, consider another example of such ambiguous structures as follows.

- (69)    zan                    -e    xaiyāt        1. 'the woman-tailor'  
          (woman/wife)            (tailor)        2. 'the tailor's wife'



The ambiguous NP (69) is formed by the lexically ambiguous noun zan as both 'woman' and 'wife', the syntactically ambiguous linking morpheme as both the adjectival -e and possessive -e, and the word xaiyat 'tailor' which can function as both adjective and noun, depending upon the particular interpretation of the whole NP either as (1) 'the woman-tailor' or (2) 'the tailor's wife', respectively. Since more discussion of this sort of ambiguity and, in particular, words such as xānande 'singer' in (66) and xaiyat 'tailor' in (69) which can serve as both nouns and adjectives involves the syntactic characteristics of adjectives which are the subject of arguments to be presented in chapter three, the linking morpheme -e will not be considered further here, but another type of linking morpheme will now be examined as follows.

There is a type of linking morpheme, similar to -e (discussed above), which functions to attach restrictive relative clauses to their head-nouns. This linking morpheme appears as -i and has /-?i/ as its allomorph if added to nouns ending with a vowel or semi-vowel. Examples of such NP-constructions are as follows :

- (70) ketāb -i ke ru miz -e  
 (book) (that) (on) (table) (is)  
 'the book which is on the table'

- (71) ketāb-hā -?i ke ru miz -and  
 (books) (are)  
 'the books which are on the table'

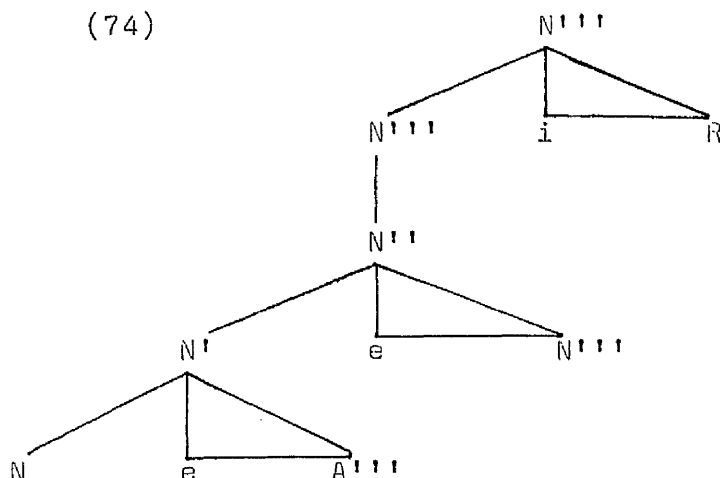
Further discussion on the linking morpheme -i will be presented in chapter five (5.3.3). Finally, it may be noted that the three types of linking morpheme distinguished as the adjectival -e, possessive -e, and the -i of restrictive relative clauses, since they belong to different categories of NP-modifiers, can freely occur with each other in the same NP, as shown below.

- (72) raʔis-e jadid-e kār-xune -ʔi ke man  
 (boss) (new)(of) (factory) (that) (I)  
 tu -s̄ kār-mikon-am  
 (in) (it) (work-I)  
 'the new boss of the factory in  
 which I work'

- (73) surat-e zibā -ye doxtar-i ke  
 (face) (beautiful)(of) (girl) (that)  
 dišab did-i  
 (last night) (saw-you)  
 'the beautiful face of the girl  
 whom you met last night'

To clarify the structure of such NPs as (72) and (73) which have three successive different categories of modifiers, observe that following discussions presented earlier about adjectival -e and possessive -e, and also the analysis of restrictive relative clauses (to be made in 5.3.1) that they are N'''-complements, the structure schema (74) below demonstrates the different categories of modifiers which require linking morphemes.

(74)



Here, R is used as a sentential node representing relative clauses. Details of such structures as (74) will be presented in the following chapters.

### 2.1.2c Postnominal Modifiers

Postnominal modifiers of NPs can be categorized into three different groups. The first category consists of postnominal adjectives (A). Examples of these modifiers are xub 'good' and bozorg 'great , big' in the following NPs.

(75) mard-e xub 'the good man'  
(man) (good)

(76) xune-ye bozorg 'the big house'  
(house) (big)

Discussion of the syntactic characteristics of postnominal adjectives and their different types are the subject of the following chapter (ie, chapter three). What can be considered as typical for postnominal adjectives is that they invariably precede any other postnominal modifiers.

This can easily be demonstrated by examples such as (72) and (73) above with the cooccurrences of some postnominal modifiers.

The second category of postnominal modifiers comprises those such as possessive phrases (Poss) and restrictive prepositional phrases (PP). These modifiers must take linking morphemes to attach to their head-nouns. Examples of such cases are as follows.

(77) medād -e man 'my pencil'  
(pencil) (of) (I)

(78) medād -e ru miz 'the pencil on the  
(on)(table) table'

In these examples, the head-noun medād 'pencil' is followed by a possessive phrase in (77) and by a restrictive prepositional phrase in (78). As their most distinguishing characteristics, these modifiers follow postnominal adjectives and precede appositive relative clauses. Examples of the cooccurrences of possessives and prepositional phrases with postnominal adjectives are (79) and (80) below, respectively.

(79) medād-e qermez -e man  
(pencil) (red) (of)(I)  
'my red pencil'

(80) medād-e qermez -e ru miz  
'the red pencil on the table'

The cooccurrences of these modifiers with appositive relative clauses (as identified in chapter five) will be

discussed later, but an example of such cases is presented in (81) below.

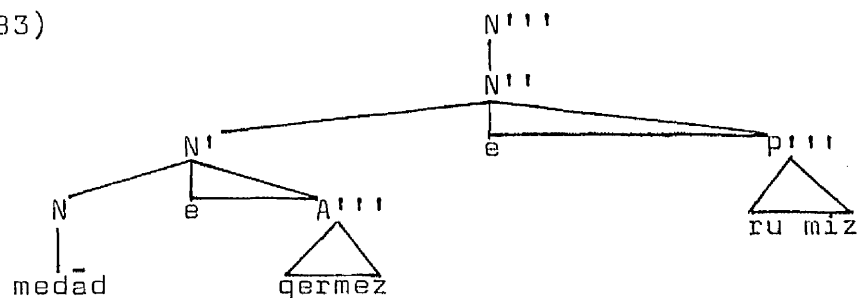
- (81) medād    -e    man    ke    ru    miz    bud  
       (pencil) (of) (I) (that) (on) (table) (was)  
               'my pencil, which was on the  
               table'

Such possible cooccurrences (as in (79) and (81)) form the basis, in 2.2.1b, for arguing for possessives as N'-complements. If such argument is correct, since restrictive prepositional phrases exhibit a similar distribution as possessives and, moreover, restrictive prepositional phrases can not cooccur with possessives within the same NPs, it can be argued that restrictive prepositional phrases are also N'-complements. To clarify this further, an example of ungrammatical cooccurrences of possessive phrases and restrictive prepositional phrases is presented below.

- (82)\* medād    -e    man    -e    ru    miz  
       (pencil)(of)(I)        (on)(table)

Having argued for restrictive prepositional phrases as N'-complements, NPs such as (80) with the grammatical cooccurrence of postnominal adjectives and restrictive prepositional phrases must then have the following structure.

(83)



Finally, the third category of postnominal modifiers consists of relative clauses and appositive phrases. One of the characteristics of relative clauses is that they follow other postnominal modifiers and occur rightmost within NPs. An example of this characteristic is given in (81) above. Further discussion on relative clauses is presented in chapter five. Appositive phrases are like doxtar-e man 'my daughter' (in, for instance, minā, doxtar-e man 'Mina, my daughter') which require no linking morpheme, and modify only proper head-nouns, as will be discussed later.

## 2.2 INTERNAL STRUCTURE

Excluding pronouns from discussions (as explained in 2.1), the present section will be concerned primarily with the internal structure of those NPs whose obligatory elements are head-nouns. A general picture of the composition of such NPs will (as discussed earlier) look like the following (84), in which both prenominal and postnominal NP-modifiers are of different categories (discussed in 2.1.2).

(84)  $NP \rightarrow (\text{prenominal modifier}) N' (\text{postnominal modifier})^1$

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1. Bateni (1969), p. 138.

There exist, however, variations in the internal structure of NPs, since head-nouns exhibit different acceptability for particular types of NP-modifiers. For instance, 'proper' head-nouns (or those distinguished previously as  $\left[ \text{-Common} \right]$ ) can not normally take adjectives and/or restrictive relative clauses (see 5.2.1d), as their postnominal modifiers. Since (these sorts of) syntactic variations of head-nouns are, in this PS-grammar, determined by a set of features which in turn are copied from those of their dominating NPs (according to the HFC principle, introduced in 1.3.3), the differences in the internal structure of NPs are accounted for as the differences of the subcategories of NPs, each of which have different types of structure associated with their defining syntactic features. Following such subcategorization, it is then clear that, in line with the binary features introduced in 2.1.1c,  $\left[ \text{-Common} \right]$  nouns, for instance, are the head of  $\left[ \text{-Common} \right]$  NPs, and so on. Similarly, the singularity/plurality status of head-nouns (discussed in 2.1.1b) are determined by features  $\left[ \text{±Singular} \right]$  of their corresponding NPs.

As the first general distinction, the syntactic category NP in Persian can be distinguished as being of two subcategories 'definite' and 'indefinite', referred to by features  $\left[ \text{±Definite} \right]$  and  $\left[ \text{-Definite} \right]$  respectively, according to their internal structures (and also semantic interpretation). The internal structure of such subcategories

will be dealt with in two separate parts, 2.2.1 and 2.2.2 below, respectively. Since the surface structure of indefinite NPs is, in most cases, associated with the occurrence of the indefinite marker -i, an investigation of the indefinite marker and its structure will be presented in 2.2.3 below.

### 2.2.1 Definite NPs

The internal structure of definite NPs differs depending on whether they are of  $[+Common]$  or  $[-Common]$  types. To clarify the contribution of these features,  $[+Common]$  NPs dominate  $[+Common]$  head-nouns, and  $[-Common]$  NPs dominate  $[-Common]$  head-nouns. Put differently, NPs with  $[+Common]$  feature have common nouns as their head and those with  $[-Common]$  have proper head-nouns.

NPs with  $[+Common]$  categorial feature can usually have prenominal modifiers of the types demonstrative (see 2.3), quantifier (see chapter four), and prenominal adjective (see chapter three). Examples of such NPs are as follows.

(85) in            zan            'this woman'  
      (this) (woman)

(86) cand        zan            'some woman'  
      (some)

(87) xoṣṣeltarin        zan            'the most beautiful  
      (most beautiful)        woman'

Among these prenominal modifiers of  $[+Common]$  NPs,



prenominal adjectives can not normally be used if the NPs contain demonstratives and/or quantifiers. Examples are given below to clarify this.

(88) in cānd zan 'these few women'

(89)\* in xošgeltarin zan-hā

(90)\* cānd xošgeltarin zan-hā

(91)\* in cānd xošgeltarin zan-hā

Considering the cooccurrences of demonstratives and quantifiers as prenominal modifiers of the same NP, notice that demonstratives must always precede quantifiers. Thus, while NPs such as (88) for instance, are grammatical, the corresponding example (92) below with the demonstrative in 'this' following the quantifier cānd 'some' is deviant.

(92)\* cānd in zan

Definite NPs with  $\left[ +\text{Common} \right]$  categorial feature can also have postnominal modifiers of the types relative clause (see chapter five), possessive (see section 2.1.2b), and postnominal adjective (see chapter three). The following NPs are examples of such NP-constructions.

(93) zan      -i ke      injā      bud  
          (woman)      (that)(here) (was)  
                                  'the woman who was here'

(94) zan      -e      u  
          (wife)      (of) (he)  
                                  'his wife'

- (95)    zan        -e xošqel        'the beautiful woman'  
          (woman) (beautiful)

The internal structure of NPs in the examples above is formed by the head-noun zan 'woman, wife' and a (restrictive) relative clause in (93), a possessive phrase in (94), and a postnominal adjective in (95), as postnominal modifiers.

Of these three categories of postnominal modifier, only (postnominal) adjectives can cooccur with possessives and relative clauses. For instance, in addition to the NP-constructions in (93-95) above, NPs (96) and (97), in which the adjective xošqel 'beautiful' precedes the other types of postnominal modifier, are grammatical.

- (96)    zan -e xošqel -i ke injā bud  
                                  'the beautiful woman who was here'
- (97)    zan -e xošqel -e u  
                                  'his beautiful wife'

Considering the order of (postnominal) adjectives in cooccurrence with other categories of postnominal modifiers, notice that adjectives (as in (96) and (97) above) always precede any other types of postnominal modifier. Thus, corresponding to (96) and (97), for instance, the following NPs in which the adjective xošqel 'beautiful' has followed the (restrictive) relative clause and the possessive element respectively are not grammatical.

- (98)\* zan -i ke injā bud -e xošqel
- (99)\* zan -e u -ye xošqel

This fact will be used in determining the syntax of adjective phrases to be presented in 3.3:

Unlike  $\left[ +\text{Common} \right]$  NPs, definite NPs with  $\left[ -\text{Common} \right]$  categorial feature, namely, those with proper nouns (see 2.1.1c) as their heads, can not usually have any type of prenominal modifier at all. However, there may rarely be cases of demonstratives in  $\left[ -\text{Common} \right]$  NPs in very colloquial Persian, in which demonstratives bear a rather different semantic function to their head-nouns. To illustrate such functions, consider the following examples of the purely colloquial.

- (100)  $\frac{\text{in}}{\text{(this)}} \frac{\text{ahmad}}{\text{(Ahmad)}} \text{ pesar } -\text{e} \frac{\text{xub-i}}{\text{(good)}} \frac{-\text{ye}}{\text{(is)}}$   
 '(this) Ahmad is a good boy'

- (101)  $\frac{\text{un}}{\text{(that)}} \frac{\text{ahmad}}{\text{(Ahmad)}} \text{ ke } \frac{\text{diruz}}{\text{(that)}} \frac{\text{injā}}{\text{(yesterday)}} \frac{\text{injā}}{\text{(here)}}$   
 $\text{bud } -\text{o } \text{nadid-i ?}$   
 $\text{(was) } -\text{DO } \text{(Neg-saw-you)}$   
 'didn't you see (that) Ahmad  
 who was here yesterday'

As illustrated above, sentences such as (100) and (101) with demonstratives in 'this' and un 'that' as prenominal modifiers of  $\left[ -\text{Common} \right]$  NPs (with proper head-nouns) may only be used in the colloquial language in cases of selecting one specific person out of others with the same name (and distinguishing characteristics). Having such semantic functions, demonstratives can be used, only in the colloquial

language, as the prenominal modifiers of  $\left[ \text{-Common} \right]$  definite NPs only with  $\left[ \text{+Human} \right]$  head-nouns, due to the fact that proper nouns can usually be used to name more than one (specific) person at a time. However, since it is not the intention here to discuss such semantic functions and distinguish them from the ordinary interpretation of demonstratives, the PS-grammar will be formulated so as to permit the generation of the prenominal demonstrative modifiers of definite  $\left[ \text{-Common} \right]$  NPs.

Among the postnominal modifiers (discussed in 2.1.2c), definite NPs with  $\left[ \text{-Common} \right]$  feature can contain appositive modifiers such as appositive relative clauses. Since such NP-constructions with appositive relative clauses are the subject of discussions to be presented in chapter five, the few examples given below will suffice here.

- (102) landan ke zamāni yek bandar-e kučik-i  
 (London) (that) (once) (a) (harbour) (small-a)  
bude, hālā yeki az bozorgtarin  
 (has been) (now) (one) (of) (biggest)  
šahr-hā-ye doniyā -st  
 (cities-of) (world) (is)

'London, which was once a small harbour, is now one of the biggest cities of the world'

- (103) landan, pāyetaxt-e engelīs, yeki az  
 (London) (capital-of) (England) (one) (of)  
 bozorgtarin šahr-hā-ye doniyā -st  
 (biggest) (cities-of) (world) (is)

'London, the capital of England, is one of the biggest cities of the world'

- (104) ahmad, ke tu xiyābun did-im-eš,  
 (Ahmad)(that)(in) (street)(saw-we-him)  
 ham qarār -e fardā biyā-d  
 (also)(supposed)(is)(tomorrow)(comes-he)  
 'Ahmad, whom we saw in the  
 street, is also supposed  
 to come tomorrow'

- (105) ahmad, dust-e ali, ham qarār-e  
 (friend-of) (Ali)(also)  
 fardā biyā-d  
 'Ahmad, a friend of Ali,  
 is also supposed to come  
 tomorrow'

The NPs of the above examples contain, besides their head-nouns, appositive relative clauses in (102) and (104), and appositive phrases in (103) and (105).

Definite NPs with the feature  $\left[ \text{-Common} \right]$  can not have restrictive modifiers such as restrictive relative clauses and restrictive prepositional phrases. To clarify this, consider the following examples with the restrictive relative clause and restrictive phrase corresponding to (104) and (105) respectively.

- (106)\* ahmad-i ke tu xiyābun did-im-eš  
 (Ahmad) (that)(in) (street) (saw-we-him)  
 (107)\* ahmad-e dust -e ali  
 (Ahmad) (friend-of) (Ali)

The ungrammatical occurrence of restrictive relative clauses as the postnominal modifiers of definite  $\left[ \text{-Common} \right]$  NPs

will also be discussed in chapter five.

As postnominal modifiers, [-Common] NPs can not normally have (pre- or postnominal) adjectives either. For example, the following NPs (108) with the prenominal adjective qadbolandtarin 'tallest' and (109) with the postnominal adjective bozorg 'big' are not grammatical.

(108)\* qadbolandtarin ahmad  
(tallest) (Ahmad)

(109)\* landan -e bozorg  
(London) (big)

However, there are a few cases in the language, like kuroš-e kabir 'the Great Cyprus', with proper nouns followed by postnominal adjectives, in which adjectives function as part of the person's name, rather than as modifiers. Adjectives in this function do not have the primary characteristics of true adjectives discussed in 3.3. For instance, adjectives following proper nouns can not have comparative or superlative forms, take intensifiers, nor occur predicatively, as demonstrated below.

(110a) kuroš -e kabir 'the Great Cyprus'  
(Cyprus) (great)

(110b)\* kuroš -e kabirtar  
(greater)

(110c)\* kabirtarin kuroš  
(greatest)

(110d)\* kuroš xeili kabir  
(very)

(110e)\* kuroš kabir -e  
(is)

Since structures like (110a), the name of a person, are exceptional cases, the PS-grammar to be developed here does not admit modification of adjectives within  $\left[ -\text{Common} \right]$  NPs. Excluding structures like (110a), the internal structure of definite NPs in Persian can be summarized by separating them into two types  $\left[ +\text{Common} \right]$  NPs and  $\left[ -\text{Common} \right]$  NPs, each with a particular constituent as follows.  $\left[ +\text{Common} \right]$  NPs can have, in addition to their head-noun, prenominal modifiers of the categories demonstrative, quantifier, and prenominal adjective, and also postnominal modifiers of the types postnominal adjective, possessive, prepositional phrase, and relative clause. Unlike  $\left[ +\text{Common} \right]$  NPs, modifiers of definite NPs of the kind  $\left[ -\text{Common} \right]$  are restricted to demonstratives only as prenominal modifiers, and appositive phrases and appositive relative clauses as their postnominal modifiers.

### 2.2.2 Indefinite NPs

Indefinite NPs can be divided into two types referred to here as  $\left[ +\text{Generic} \right]$  and  $\left[ -\text{Generic} \right]$ , which differ from each other in both their semantics and formation. This section is intended to explore the internal structure of these two types of indefinite NPs, as follows.

Indefinite NPs of  $\left[ +\text{Generic} \right]$  type can only have prenominal adjectives, among different categories of

prenominal modifiers discussed earlier. This is simply because the prenominal modification of demonstratives and quantifiers contradicts the generic sense of  $\left[ +\text{Generic} \right]$  NPs. Examples of  $\left[ +\text{Generic} \right]$  indefinite NPs with prenominal adjectives are such as the following.

- (111)  $\text{ketāb } \underline{\text{behtarīn dust}} \quad \text{-e}$   
 (book) (best) (friend) (is)  
 'books are the best friends'

In examples such as (111), the NP behtarīn dust 'best friend' is a  $\left[ +\text{Generic} \right]$  indefinite NP which, in its cognitive function, refers to the class of 'best friends' nonspecifically.

Among postnominal modifiers,  $\left[ +\text{Generic} \right]$  indefinite NPs can have appositives and postnominal adjectives. Examples of such NPs are (112), with postnominal adjective, and (113), with appositive relative clause, below.

- (112)  $\text{ketāb } \text{-e xub} \quad \text{behtarīn dust-e ādam } \text{-e}$   
 (book) (good) (best) (friend)(man) (is)  
 'good books are the best friends  
 of man'

- (113)  $\underline{\text{ketāb, ke behtarīn dust-e ādam -e,}}$   
 (that)  
 sargarmi-ye xub-i ham hast  
 (entertainment) (good) (also) (is)  
 'books, which are the best  
 friends for man, are also  
 good entertainment'

The reason why  $\left[ +\text{Generic} \right]$  indefinite NPs can not



contain postnominal modifiers such as restrictive relative clauses is that these types of modifier (as will be discussed later) restrict the reference of their NPs so that they can no longer have generic interpretations. Thus, for instance, attaching a restrictive relative clause, such as the following, to the head-noun of the sentence (113) requires the resulting NP to be interpreted as definite.

(114) ketāb-i ke behtarīn dust-e ādam -e

'the book which is the best  
friend for man'

Such interpretations support the analysis presented earlier that restrictive relative clauses are postnominal modifiers of definite NPs. Thus, in general, indefinite NPs, including  $\left[ -\text{Generic} \right]$  types (discussed below), can not contain restrictive modifiers such as restrictive relative clauses.

Unlike  $\left[ +\text{Generic} \right]$  NPs, the internal structure of  $\left[ -\text{Generic} \right]$  indefinite NPs varies according to the presence or absence of the indefinite marker -i (discussed in 2.2.3) in NP-constructions. To account for such variations  $\left[ -\text{Generic} \right]$  indefinite NPs are further marked by either of  $\left[ +i \right]$  and  $\left[ -i \right]$  features indicating the particular formation of NPs. It is then obvious by convention that indefinite NPs which are marked as  $\left[ +i \right]$  must necessarily contain the -i marker, and those with  $\left[ -i \right]$  feature are not marked in the surface structure by the indefinite marker -i. Discussion of the internal structure of both  $\left[ +i \right]$  and  $\left[ -i \right]$  indefinite NPs will be presented as follows. Consider first the following

examples of  $\llbracket +i \rrbracket$  and  $\llbracket -i \rrbracket$  types of indefinite NPs in (115) and (116) below respectively.

- (115) pesar-i dombāl -et migašt  
(boy) (following)(you) (was looking-he)  
'a boy was looking for you'

- (116) yek pesar dombāl-et migašt  
(a) (boy)  
'a boy was looking for you'

Both  $\llbracket +i \rrbracket$  and  $\llbracket -i \rrbracket$  types of indefinite NPs similarly can not have demonstratives as their postnominal modifiers. That is, the occurrences of demonstratives in NPs contradict the syntactic and semantic indefinite status of the whole NP-construction.<sup>1</sup> Thus, NPs such as (117) and (118) below, for instance, are always definite by virtue of the occurrences of demonstratives.

- (117) un pesar 'that boy'  
(that)(boy)

- (118) in xune 'this house'  
(this)(house)

This claim is supported syntactically by the fact that NPs such as (119) and (120) below with both demonstratives and indefinite marker -i are not grammatical.

- (119)\* un pesar-i az dur dāre-miyā-d  
(that)(boy) (from) (far) (is coming-he)

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1. See also Bateni (1969), pp. 167-168.

(120)\* in xune -?i -ro xaride-?am  
 (this) (house) -DO (have bought-I)

The  $\left[ +i \right]$  and  $\left[ -i \right]$  types of indefinite NPs are also similar in that they can not contain prenominal adjectives (that is, superlatives). Examples of such ungrammatical NP-constructions are (121), the  $\left[ +i \right]$  type, and (122), the  $\left[ -i \right]$  type of indefinite NPs, with the prenominal adjectives behtarin 'best' and kučiktarin 'smallest' respectively.

(121)\* behtarin pesar-i dust-e man -e  
 (best) (boy) (friend-of) (I) (is)

(122)\* yek kučiktarin xune xaride-?am  
 (a) (smallest) (house) (have bought-I)

However, both  $\left[ +i \right]$  and  $\left[ -i \right]$  types can be constructed with postnominal adjectives. Thus, corresponding to (121) and (122), for instance, the two NPs in (123) and (124) below with postnominal adjectives xub 'good' and kučik 'small' respectively are perfectly acceptable.

(123) pesar -e xub-i dust -e man -e  
 (boy) (good) (friend-of)(I)(is)  
 'a good boy is my friend'

(124) yek xune -ye kučik xarid-am  
 (a) (house) (small)(bought-I)  
 'I bought a small house'

In spite of the similarities of the kind mentioned above in the internal structures of the  $\left[ +i \right]$  and  $\left[ -i \right]$



that the NP in the former construction is a  $[+i]$  indefinite NP (with, of course, the indefinite marker -i) followed by an appositive relative clause, whereas in the latter construction, it is a definite NP composed of a definite head followed by a restrictive relative clause as its postnominal modifier. Such NP-constructions as in (126) can easily be recognized as definite, since the postnominal modification of restrictive relative clauses is, as stated earlier, a distinguishing characteristic of definite NPs (see 2.2.1). This distinction matches the semantic interpretation by native speakers of NPs with restrictive relative clause as definite.

To avoid ungrammaticalities such as (125), speakers of Persian usually employ  $[-i]$  indefinite NPs with quantifiers if appositive relative clauses need to be produced. Thus, corresponding to (125), a grammatical indefinite NP would be, for instance, the following.

- (127)  $\frac{\text{yek pesar, ke esm -e xodes̄ -o}}{(\text{a}) (\text{boy}) (\text{that}) (\text{name-of}) (\text{himself}) -\text{DU}}$   
 $\frac{\text{nagoft, dombāl -et migašt}}{(\text{Neg-said-he}) (\text{following}) (\text{you}) (\text{was looking-he})}$   
 'a boy, who didn't reveal his  
 name, was looking for you'

Notice that such structures are similar to  $[+Common]$  definite NPs with quantifier and appositive relative clause as their modifiers. However, the two types of structures,  $[-i]$  indefinite NP and  $[+Common]$  definite NP, are in such

cases distinguished from one another by the presence of an accent on the head-noun of the latter structure. Thus, the semantic interpretation of NPs as in (127) is associated with the place of accentuation in relation to the head-noun. To clarify this further, the following example illustrates a case of ambiguity between definiteness and indefiniteness, which is disambiguated by the place of accent :

- (128a) do ketāb ru miz -e  
 (two) (book) (on) (table) (is)
1. 'the two books are on the table'  
 (definite)
  2. 'two books are on the table'  
 (indefinite)

- (128b) do ke'tāb ru miz -e  
 'the two books are on the table'  
 (definite)

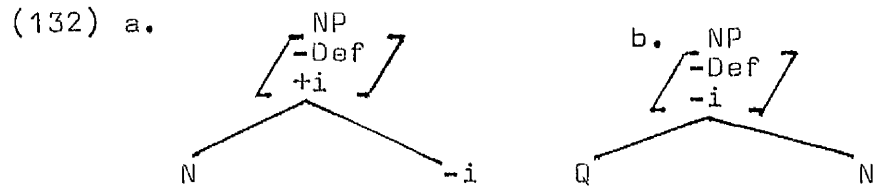
- (128c) 'do ketāb ru miz -e  
 'two books are on the table'  
 (indefinite)

As demonstrated above, the accentuation of head-nouns in structures like (128) requires its semantic interpretation to be definite. Thus, unaccented head-nouns in such structures are ambiguous between definiteness and indefiniteness, unless their preceding quantifier is accented which results in a definite interpretation.

Observing such cases, it may thus be concluded that the [ -i ] type indefinite NPs, since they are not marked with the indefinite marker -i, must necessarily contain



NPs with two different surface structure realizations, the structure of NPs in (129) and (130) can be demonstrated in the usual notation as follows.



Notice that both the marker -i in (132a) and the quantifier in (132b) must be considered as obligatory constituents of  $[-i]$  and  $[-i]$  indefinite NPs respectively, since NPs without either of them are understood as definite. To clarify the interpretation of NPs with no indefinite marker as such, consider the following examples.

- (133) ketāb ru miz -e  
(book)(on)(table)(is)  
'the book is on the table'

- (134) do ketāb ru miz bud  
(two) (was)  
'two books were on the table'  
(indefinite)  
'the two books were on the  
table' (definite)

Unlike the definite NP in (133), the NP-construction in (134) can either be definite or  $[-i]$  indefinite, depending upon the accentuation of its head-noun, as in the examples in (128) above.

In older Persian, indefinite NPs could also be formed from head-nouns with both quantifier and the indefinite



marker -i,<sup>1</sup> that is, NPs such as (131) above, which are ungrammatical in present-day Persian, were regularly used as grammatical phrases in earlier Persian. Due to such syntactic changes of the language, observations and classifications of grammarians such as Mo'in (1969, p.15) and Azadi-Ardakani (1970, pp.23-24) for indefiniteness and its markers in Persian are no longer valid.

Following the internal structure of  $\left[ \text{-Generic} \right]$  indefinite NPs, it becomes clear that neither the  $\left[ \text{+i} \right]$  or  $\left[ \text{-i} \right]$  types can have possessive phrases, restrictive prepositional phrases or restrictive relative clauses as their postnominal modifiers. In more detail, the occurrence of these postnominal modifiers (with, of course, their linking morphemes) makes impossible the existence of the indefinite marker -i in the  $\left[ \text{+i} \right]$  type of indefinite NPs, and the accentuation of the head-noun in  $\left[ \text{-i} \right]$  types. For instance, consider the following  $\left[ \text{+i} \right]$  indefinite NPs with different categories of postnominal modifiers.

(135)\*  $\frac{\text{māsīn-i}}{(\text{car})} \left[ \begin{array}{c} \text{-?i ke} \\ \text{(that)(have bought-I)} \end{array} \right] \bar{\text{S}}$

(136)\*  $\frac{\text{māsīn-i}}{\text{pp}} \left[ \begin{array}{c} \text{-ye kenāre} \\ \text{xiyābun} \end{array} \right] \text{pp}$

(137)\*  $\frac{\text{māsīn-i}}{\text{Poss(of)(I)}} \left[ \begin{array}{c} \text{-e man} \\ \text{Poss} \end{array} \right] \text{Poss}$

To clarify the structure of the ungrammatical examples

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1. See, for instance, Kian (1978), p. 26.

above : these NPs are composed of the indefinite head-noun māsin-i 'a car' (marked by the indefinite marker -i) and restrictive relative clause in (135), restrictive prepositional phrase in (136), and possessive phrase in (137).

The same ungrammaticalities will also occur with  $\left[ -i \right]$  indefinite NPs if containing these postnominal modifiers. Examples below are given to clarify this.

(138)\* yek māsin  $\left[ \begin{array}{c} \text{S} \end{array} \right]$   $\left[ \begin{array}{c} -i \text{ ke} \text{ xaride-?am} \\ \text{(a) (car) (that)(have bought-I)} \end{array} \right]$   $\left[ \begin{array}{c} \text{S} \end{array} \right]$

(139)\* yek māsin  $\left[ \begin{array}{c} \text{PP} \end{array} \right]$   $\left[ \begin{array}{c} -e \text{ kenāre xiyābun} \\ \text{(beside)(street)} \end{array} \right]$   $\left[ \begin{array}{c} \text{PP} \end{array} \right]$

(140)\* yek māsin  $\left[ \begin{array}{c} \text{PP} \end{array} \right]$   $\left[ \begin{array}{c} -e \text{ man} \\ \text{(of) (I)} \end{array} \right]$   $\left[ \begin{array}{c} \text{PP} \end{array} \right]$

Examples of  $\left[ -i \right]$  indefinite NPs, since they are formed by the restrictive relative clause in (138), restrictive prepositional phrases in (139) and possessive phrase in (140), as well as their unaccented head-noun māsin 'car' and its preceding numeral yek 'a', are not grammatical. Such ungrammaticalities and also those in (135-137) above can be used to conclude that  $\left[ \text{-Generic} \right]$  indefinite NPs (of both types  $\left[ +i \right]$  and  $\left[ -i \right]$ ) can not contain as their postnominal modifiers the categories of restrictive relative clause, restrictive prepositional phrase, and possessive. Since  $\left[ +\text{Generic} \right]$  indefinite NPs, too, can not have these postnominal modifiers (as discussed earlier), this conclusion can then be expanded to  $\left[ \text{-definite} \right]$  NPs of different

subcategories and types. Such a conclusion, which is based on the internal structure of NPs, parallels the semantic intuition of native speakers, since modifiers such as, for instance, restrictive relative clauses and possessives generally modify their head-nouns such that they (ie, head-nouns) will be understood semantically as definite nouns.

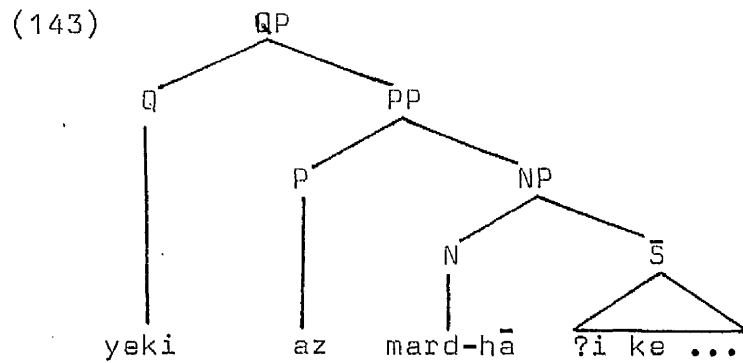
However, to form grammatical constructions corresponding to, for instance, English indefinite NPs such as

(141) a man who was here last night,

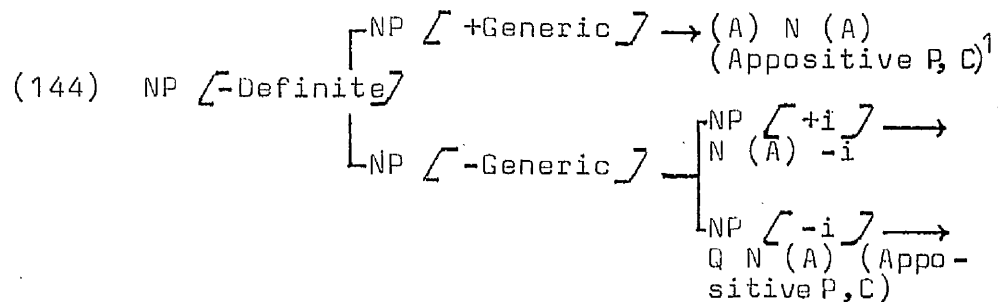
Persian speakers usually employ larger QPs consisting of quantifiers followed by prepositional phrases whose NPs are modified by restrictive clauses. For instance, corresponding to the English NP in (141), Persians will use NP-constructions such as the following.

(142) yeki az mard-hā  $\bar{S}$  -?i ke dišab  
 (one) (of) (men)  $\bar{S}$  (that) (last night)  
 injā bud  $\bar{S}$   
 (here) (was)  $\bar{S}$   
 'one of the men who was here  
 last night'

To clarify such constructions, the syntactic structure of NPs in (142) would, according to the usual notation, look like the following.



Finally, the internal structure of indefinite NPs can, on the basis of the above-mentioned observation, be summarized by the following schema. Notice that restrictions on the cooccurrences of different prenominal and post-nominal categories of modifiers are not exhibited here.



### 2.2.3 The Indefinite Marker -i

As the distinguishing element of  $[+i]$  type indefinite NPs, the present subsection will be addressed to discussions

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1. The term 'Appositive P,C' used in the schema to refer to both appositive phrases (such as ahmad, pesar-e man 'Ahmad, my son') and appositive relative clauses (such as ahmad, ke pesar-e man -e 'Ahmad, who is my son').

of the indefinite marker -i. These discussions also include the syntactic structure of the indefinite marker as the constituent of a particular nominal category available in the PS-grammar.

The indefinite marker -i is usually introduced in most traditional grammars as an enclitic which attaches to the end of nouns and makes them indefinite.<sup>1</sup> Such views are based on examples such as :

- (145) pesar-i injā bud  
(boy) (here)(was)  
'a boy was here'

- (146) otomobil-i bā sorʔat rad-šod  
(car) (with) (speed)(passed-it)  
'a car passed quickly'

Further, the indefinite marker -i<sup>2</sup> has been used by some Persian grammarians like Beheshti (1976, p.51) for instance, as a major criterion for distinguishing the category of noun. According to these grammarians, nouns are the class of words which can take the indefinite marker. Following such observations, Elwell-Sutton (1963, p.43) notices that the indefinite marker may actually be added to the end of NPs. Examples of such cases are the following.

- (147) pesar -e qadboland -i injā bud  
(boy) (tall) (here) (was)  
'a tall boy was here'

---

1. See, for instance, Thackston, Jr.(1978), p. 50.

2. Mo'in (1962), p.19, writes that the -i in Modern Persian is from Avestan aeva 'one' and Pahlavi ēvak, ēv 'one'

- (148) otomobil -e sabzrang -i <sup>bā</sup>  
 (car) (green-coloured)(with)  
 sor?at rad-<sup>sod</sup>  
 (speed)(passed-it)  
 'a green car passed qyquickly'

As an alternative to the addition of the indefinite marker to the end of NPs, Elwell-Sutton (1963, p. 44) then refers to the highly stylistic usage of -i in the written language and adds that the indefinite marker can also be added to nouns followed by adjectives. Examples of such literary usage of the indefinite marker are given in (149) and (150) below.

- (149) manzel -i bozorg 'a big house'  
 (house) (big)  
 (150) doxtar -i xošgel 'a beautiful girl'  
 (girl) (beautiful)

Examples such as (149) and (150) with the indefinite marker attached to the noun and followed by an adjective, since they are not normally used in the spoken language nor the ordinary written form of the language, will not be included in the PS-grammar to be developed in this study.

Bearing in mind the occurrences of the indefinite marker in the spoken form of the language, the -i marker, on the basis of NPs such as the following, will be accounted for as a constituent of NPs (of the type  $[+i]$ , discussed earlier).

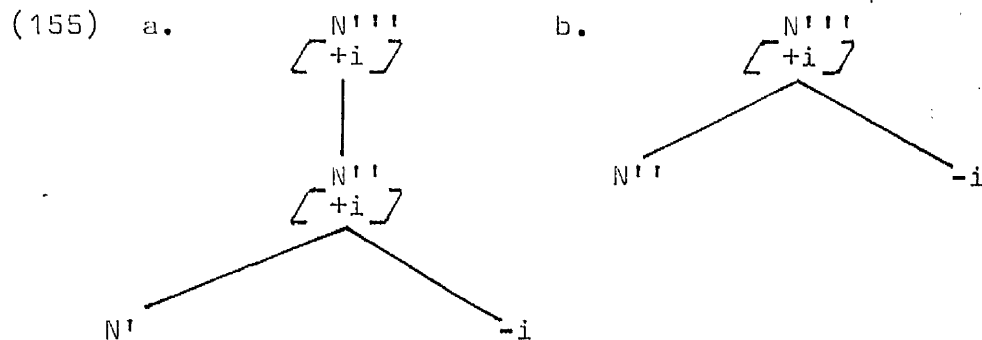
- (151) pesar -i <sup>dāre-miyā-d</sup> 'a boy is coming'  
 (boy) (is coming-he)

- (152) pesar /-e qadboland ʔ -i dāre-miyā-d  
(tall)  
'a tall boy is coming'
- (153) pesar /-e xeili qadboland ʔ -i dāre-miyā-d  
(very)(tall)  
'a very tall boy is coming'
- (154) pesar /-e qadboland -o lāqar ʔ -i  
(and)(thin)  
dāre-miyā-d  
'a tall and thin boy is coming'

The indefinite marker in the NPs of the examples above is, as demonstrated, a constituent of NPs preceded by the head-noun in (151) and adjective phrases in (152) to (154). The next point to consider now is the syntactic position of the indefinite marker, that is, which of the available nominal category is to dominate it.

Examples of indefinite NPs such as those in (152) to (154) with the indefinite marker following adjective phrases argue strongly that the -i (designating the indefiniteness of NPs) must belong to NP categories higher than that dominating adjectives phrases. Since adjective phrases are argued in chapter three to be N'-complements, the NP-categories available to dominate the indefinite marker as their constituents must then be either (or both) of the categories N'' and N'''. To determine this, since indefinite NPs with the indefinite marker (that is, [+i] indefinite NPs) can not contain restrictive nor appositive types of postnominal

modifiers (introduced in 2.2.2), it is not possible to use the test of cooccurrences of the indefinite marker and other postnominal modifiers any further. In such cases, one must permit the occurrence of the marker -i as the constituent of both categories  $N''$  and  $N'''$ , provided that they are marked as  $[+i]$ . Put differently, both the nominal categories  $N''$  and  $N'''$ , if they are of  $[+i]$  type, can be expanded to dominate the -i marker. Such expansions of  $[+i]$  definite NPs would look like the following.



Such syntactic positions of the -i marker explain cases like (152) to (154) above where the indefinite marker follows adjective phrases, for (postnominal) adjectives (as argued in chapter three) are postnominal modifiers of  $N'$ .

To sum up discussions of this subsection, the feature  $[+i]$  is a distinguishing feature of  $[+i]$  indefinite nominal categories  $N'''$  and  $N''$ , which can be carried from  $N'''$  to  $N''$  and/or spelled out as the indefinite marker -i. For the sake of simplicity, the term NP and its internal structure used in the following discussions refers simply



to [ +Common ] definite NPs, which (as discussed in 2.2.1) can be understood to have all sorts of prenominal and post-nominal modifiers, unless otherwise stated.

### 2.3 DEMONSTRATIVES

Demonstratives are a small category of word-modifiers which have members such as the simple forms in 'this' and un 'that',<sup>1</sup> and the emphatic forms hamin 'this' and hamun 'that'. These words invariably precede the noun they modify and, like other types of modifier (such as, for instance, adjectives), do not agree with the head-noun in number, gender, etc. To clarify these, examples are given below.

- |        |                                  |               |
|--------|----------------------------------|---------------|
| (156a) | <u>in</u> doxtar<br>(this)(girl) | 'this girl'   |
| (156b) | <u>in</u> doxtar-hā              | 'these girls' |
| (157a) | <u>in</u> ketāb<br>(book)        | 'this book'   |
| (157b) | <u>in</u> ketāb-hā               | 'these books' |

Demonstratives, in particular the simple forms in 'this' and un 'that' can, in many cases, also be interpreted as definite articles in the colloquial language. With such interpretation, NPs in (156a) and (156b), for instance, can also be translated as 'the girl' and 'the girls'

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1. The demonstrative un 'that' in the spoken language corresponds to ān of the formal language. see also 2.1.2a.

respectively. Such functions of demonstratives are indicated by Stockwell (1977), as quoted below.

"Languages that do not have definite/indefinite articles use deictics- 'pointing words' like this, that, these, those- for definiteness whenever word order will not serve."<sup>1</sup>

In relation to the semantic functions of modifiers, demonstratives can generally be distinguished as those which identify the reference of the following noun deictically. Given this, demonstratives can further be divided into two groups according to the distance of the entity to which they point, whether in the mind or in the real world. For instance, in 'this' is usually used to refer to closer entities than those pointed to by un 'that'. Such semantic differences between the pair in 'this' and un 'that', for instance, can be indicated by employing a set of binary features such as [ $\pm$ Far]. According to these features, demonstratives like in 'this' are [ $-$ Far] and those like un 'that' are [ $+$ Far] types. Such distinctions for demonstratives by the features [ $\pm$ Far] will be utilized in this study.

As a general rule, demonstratives, since they occur prenominally, do not require any linking morpheme to modify head-nouns. This holds true for all types and cases of demonstrative. There are some rare cases of possessive constructions, only in the very colloquial form of the

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1. Stockwell (1977), p. 57.

language, in which in 'this' and un 'that' (among other demonstratives) can be used as the head followed by possessive phrases. The point must be emphasized that this sort of possessive construction, with demonstratives in 'this' and un 'that' as the head, are highly colloquial and can not usually be used in the written form of the language.<sup>1</sup> Examples are as follows :

- (158) in -e māsin xarāb šod  
 (this-of) (car) (broken down) (has become)  
 'this of the car is broken down'

However, this function of in 'this' and un 'that' (as in sentence (158)), since it differs from the syntactic characteristics of demonstratives as prenominal modifiers, does not, of course, invalidate the analysis that demonstratives

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1. A major reason for not using possessive constructions such as (158) above with in 'this' and un 'that' as their heads in the written language could be the absence of representation for -e of the possessives, due to the lack of symbols to represent short vowels in written Persian, which causes serious ambiguities. Thus, the NP in (158), for instance, in the written language has the form illustrated below.

- (i) این ماشین in (-e)māsin 1. 'this car'  
 (this)(of)(car) 2. 'this of the car'

This does not normally arise in the case of ordinary possessives in the written form of the language, though the possessive -e is absent. Thus, (ii), the illustration of a written possessive NP with no possessive -e and N as the head, has only one meaning, as illustrated

- (ii) تایر ماشین tāyer -e māsin 'the tyre of  
 (tyre)(of)(car) the car'

do not require linking morphemes to occur prenomonally. Instead, demonstratives in 'this' and un 'that' in such functions as the head of possessive phrases (as in (158) above) must, in fact, be classed as nouns.

For further discussion of demonstratives, a survey on the status of such modifiers in both traditional and generative grammars is presented below. This survey is followed by arguments determining the syntactic position of demonstratives as prenominal modifiers of the available NP category (among N''', N'', and N') of the PS-grammar here.

### 2.3.1 Demonstratives in Traditional Grammars

In traditional grammars, demonstratives are variously identified as belonging to different word-classes. For instance, demonstratives in 'this' and un 'that' (or its equivalent in the written form ān 'that') are said to be adjectives (eg, Thackston, Jr.(1978, p.54)), which precede their modified nouns, pronouns (eg, Khanlari (1973, p. 61)), which substitute for head-nouns, and a type of mobhamāt 'vague words' (eg, Gharib et al (1950b, pp. 2-3)), which vaguely refer to indefinite entities. In what follows, each of such classification of demonstratives as adjectives, pronouns, and 'vague words' will be examined critically.

First, the definition of demonstratives in 'this' and un 'that' as adjective stems from the fact that they always precede their modified nouns (like superlative

adjectives) and do not take plural morphemes, as illustrated below.

- (159a) in kāqaz-hā māle ki -ye  
 (these)(papers) (own)(who)(is)  
 'whose are these papers?'

(159b)\* kāqaz-hā in māle ki -ye

(159c)\* in-hā kāqaz māle ki -ye

In these examples, the demonstrative in 'this' precedes the head-noun kāqaz-hā 'papers' in (159a), follows kāqaz-hā 'papers' in (159b), and takes the plural suffix -hā and precedes the head in (159c). Of these, only (159a) in which in 'this' precedes its head-noun, is a grammatical structure. To demonstrate the similarities of such occurrences of demonstratives with prenominal adjectives (ie, superlatives) compare sentences in (159) with those following:

- (160a) behtarin māsin-hā sāxte ālmān -e  
 (best) (cars) (made)(Germany)(is)  
 'the best cars are made in  
 Germany'

(160b)\* māsin-hā behtarin sāxte ālmān -e

(160c)\* behtarin-hā māsin sāxte ālmān -e

As shown above, the only grammatical structure in (160) is (160a) in which the prenominal adjective behtarin 'best' (like the demonstrative in 'this' in (159a) above)

has preceded its head-noun.

In spite of such similarities, since the prenominal occurrence is a necessary but not sufficient condition for adjectives (see chapter three), and also because of the various conditions (mentioned below), demonstratives can not possibly be adjectives. For instance, recall that prenominal adjectives, as discussed in 2.1.2a, can not cooccur with any other type of prenominal modifiers. This is certainly not true with demonstratives, as illustrated below.

(161) in ḡand pesar 'these few boys'  
(this)(some)(boy)

(162)\* behtarin ḡand pesar  
(best)

As illustrated, demonstratives such as in 'this' in (161), for instance, are different from adjectives like behtarin 'best' in (162) in that the former, but not the latter, can cooccur with other prenominal modifiers to modify the same head-noun.<sup>1</sup>

Furthermore, considering demonstratives, in particular in 'this' and un 'that', as (a type of) adjective also stems from the definition of demonstratives given in traditional grammars as, for instance, those which "... modify their nouns by pointing to them."<sup>2</sup> This, again, is certainly not true with the semantics of adjectives. Since the semantic function of adjectives is dealt with in chapter three, this

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1. See also Vajdi (1976), pp. 235-236.

2. Kian (1978), p. 59. (Translation is my own).

point will not be discussed any further here.

However, on the basis of such factors, demonstratives can not be claimed to be adjectives or even a type of adjective established, for instance, by Khanlari (1973, pp. 180-181), as "demonstrative adjective".

Secondly, demonstratives, in particular in 'this' and un 'that' are defined as (demonstrative) pronouns. This is due to their occurrence as substitutes for NPs. To clarify this, consider the following examples.

- (163) un pesar -o mišnās-i ?  
           (that)(boy) -DO (know-you)  
                                   'do you know that boy'

- (164) un -o mišnās-i ?  
                                   'do you know him'

In sentence (164), the demonstrative un 'that' is substituted for the NP un pesar 'that boy' of (163). Such occurrences of un 'that', for instance, as the head-noun of the NP in (164) are certainly different from pronouns, since these demonstratives unlike any other pronoun in Persian, can also take plural morphemes. Thus, corresponding to (164), for instance, the following sentence has un-hā 'those' as the head-noun of its NP.

- (165) un-hā -ro mišnās-i ?  
           (those)-DO (know-you)  
                                   'do you know them'

This characteristic that demonstratives can be used

as nouns and also that they can take plural morphemes is a function of all types of demonstratives, particularly in spoken Persian.<sup>1</sup> Hence, hamin 'this' and hamun 'that', the emphatic forms of in 'this' and un 'that', for instance, can also occur as the heads of NPs as shown in the following examples.

(166a) hamin -o mixāst-i ?  
(this)-DO (wanted-you)  
'did you want this?'

(166b) hamin-hā -ro mixāst-i ?  
(these)  
'did you want these?'

(167a) hamun -o mixāst-i ?  
(that)  
'did you want that?'

(167b) hamun-hā -ro mixāst-i ?  
(those)  
'did you want those?'

On the basis of the syntactic distribution observed above, demonstratives are accounted for in this study as a category of prenominal modifier, separate from those which can take plural morphemes and function as nouns.

Finally, demonstratives are identified as a type of word-class called mobhamāt 'vague words' in cases they are used as nouns which refer to indefinite entities.

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1. See Khanlari (1973), p. 61; and also Thackston, Jr. (1978), p. 45.



Such an identification for demonstratives, in particular in 'this' and un 'that', is best described in Azadi-Ardakani (1970), as follows.

"If in and ān (ie, the written form of un 'that') do not have (ie, refer to) indefinite reference, ... they are called (a type of) mobhamāt."<sup>1</sup>

Some examples of such functions are presented below, with both in 'this' and un 'that' as nouns in coordination, neither of which refer to apparent definite entities.

- (168) moddati      barāye in-o-un  
           (for time)    (for) (this-and-that)
- kār-mikard-am  
           (was working-I)
- 'for some times I was working  
           for this and that (person)'

- (169) rāz -e      del      -et      -o    be  
           (secret-of)(heart)(your) -DO (to)
- in-o-un                      nagu  
           (this-and-that)(Neg-say)
- 'don't tell your secret to this  
           and that (person)'

Such functions of in 'this' and un 'that', as demonstratives in sentences (168) and (169) above, are semantically the same as the previous case. That is, they function as nouns, though with semantically indefinite reference. Thus, in 'this' and un 'that' in this function are different from the category of demonstratives (with their particular

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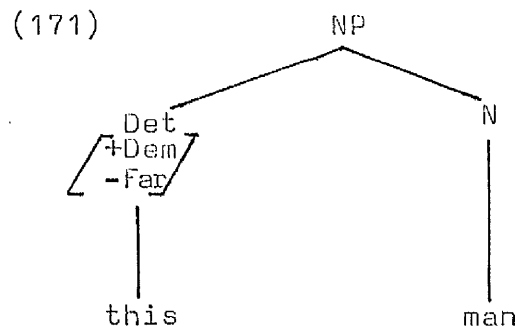
1. Azadi-Ardakani (1970), p. 44; (The translation and the explanations within parentheses are mine).

syntactic characteristics, discussed earlier) distinguished in this study as prenominal modifiers. Keeping such a distinction, a survey of demonstratives in generative grammars follows.

### 2.3.2 Demonstrative in Generative Grammars

Demonstratives in generative models such as Aspects (1965) are generated much the same as other syntactic categories of NPs. That is, demonstratives, particularly in English, are base-generated constituents which, as a type of determiner, are dominated by NPs.<sup>1</sup> To clarify this, NP-constructions such as (170) below are considered to be derived from deep structures like (171).

(170) this man



Of such analysis that demonstratives of English are base-generated constituents of NPs, there has been no serious criticism. In fact, arguments for transformational rules of English such as, for instance, reflexivization

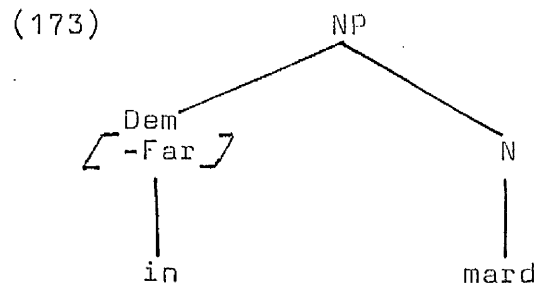
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1. See, for instance, Culicover (1976), p. 184.

and definitivization have supported, in one way or another, the deep structure generation of determiners and, hence, demonstratives as constituents of NPs.<sup>1</sup>

Concerning Persian demonstratives, no scholar has, to the best of the writer's knowledge, ever studied demonstratives and their syntactic structure in detail in a generative grammar of Persian. However, Vajdi (1976)<sup>2</sup> has assumed, without any argument, that demonstratives in Persian have the same underlying structure as English demonstratives (illustrated by (171) above). That is, an NP such as (172), for instance, corresponding to the English NP in (170), has its structure as demonstrated in (173) below, very much like (171).

(172)    in        mard                    'this man'  
          (this)(man)



Comparing (171), the structure proposed for English demonstratives, with (173), the illustration of the syntactic status of Persian demonstratives, reveals the fact that demonstratives of both English and Persian are indeed

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1. See, for instance, Stockwell et al (1973).

2. See, for instance, the structure given in Vajdi (1976), p. 118.

similar in their syntactic structures. They both modify their head-nouns prenominally and are dominated by NPs. Furthermore, any rule concerning the movement or deletion of nouns in both English and Persian also affects their demonstratives as prenominal modifiers. As an example, consider the following pairs of active/passive sentences of English and their corresponding forms in Persian.

- (174a) the police have arrested that man.
- (174b) that man has been arrested (by the police).
- (175a) polis un mard -o dastgir-karde  
(police)(that)(man)-DO(has arrested-he)  
                  'the police have arrested that  
                  man'
- (175b) un mard (bevasileye polis) dastgir-ode  
                  (by) (has been arrested-he)  
                  'that man has been arrested (by  
                  the police)'

As demonstrated above, the movement of the noun mard 'man' of the active sentence of Persian in (175a) to the (grammatical) subject position of the passive sentence (175b) has involved the movement of the demonstrative un 'that' in exactly the same way as the movement of the noun 'man' and its demonstrative 'that' in the English active/passive sentences in (174). Such relationships between demonstratives and their head-nouns are, of course, the same for all syntactic phenomena of Persian.

On grounds of such similarities in the syntactic distribution of demonstratives in English and Persian, it can be

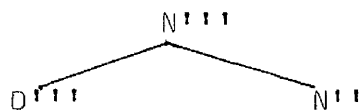
concluded that Persian demonstratives are, like English demonstratives, syntactic constituents of NPs, as illustrated by the schema (173). Having accepted this, the next stage will be to determine the particular syntactic category, of the three available nominal categories  $N'''$ ,  $N''$ , and  $N'$  in the PS-grammar, which dominates demonstratives. This is the subject of the discussion presented below.

### 2.3.3 Syntactic Structure

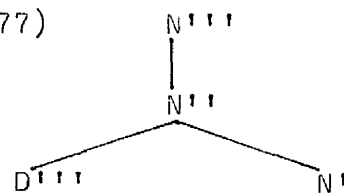
In accordance with the PS-grammar utilized in this study, of the three syntactic categories  $N'''$ ,  $N''$ , and  $N'$  one must dominate the category of demonstratives in Persian. This subsection is addressed to discussion of determining the particular nominal category needed for demonstratives.

Among the three syntactic categories of NPs, since  $N'$  is reserved for strictly subcategorizing arguments, either  $N''$  and  $N'''$  are left to dominate demonstratives. The possible syntactic structure of demonstrative would therefore be one of the two structures given by the following schemas (176) and (177).

(176)



(177)



These structures differ in that the category of demonstratives  $D'''$  is dominated in (176) by  $N'''$ , and in (177) by

N<sup>1</sup>. In arguing for one or the other of these structures as the most plausible for demonstratives, it must be remembered, as discussed in 2.1.2a, that prenominal modifiers in Persian fall into three categories : demonstratives, quantifiers (including numerals), and prenominal adjectives (that is, superlatives,). Among these three categories, it was also argued (in the same subsection) that demonstratives can cooccur with quantifiers providing that the former precede the latter. Examples of such cooccurrences are as follows.

(178) un čand ketāb  
(that)(some)

'those few books'

(179) in se nafar  
(this)(three)(person)

'these three persons'

In these examples, the two demonstratives un 'that' and in 'this' precede quantifiers čand 'some' and se 'three' respectively. To illustrate the fact that demonstratives can only cooccur with quantifiers in such an order (as in (178) and (179) above), observe that the following NPs with different order of prenominal modifiers are not grammatical.

(180)\* čand un ketāb

(181)\* se un nafar

Now, considering this crucial factor that demonstratives precede quantifiers when cooccurring, one must conclude

that they belong to the prenominal position of a higher nominal category than that dominating quantifiers. Having in mind that syntactic categories available to dominate prenominal modifiers, except adjectives, are only  $N''$  and  $N'''$ , such a higher nominal category to dominate demonstratives would then be  $N'''$ . On such grounds, it can be claimed here that the most plausible structure for Persian demonstratives is that illustrated by (176).

This claim (that demonstratives are prenominal modifiers of  $N'''$ ) is also compatible with the analyses of other NP-modifiers. Firstly, allocating the prenominal modifier position of  $N'''$  (between the two available categories  $N''$  and  $N'''$ , as explained above) to demonstratives, automatically predicts that quantifiers (including numerals, with which demonstratives can cooccur, belong to the syntactic category  $N''$ . This prediction is, in fact, compatible with the analysis of quantifiers to be presented in chapter four. Secondly, from the syntactic similarities between demonstratives of English and Persian (as discussed above), one would expect that demonstratives of both languages would have the same syntactic structure, in, of course, a three-level hypothesis of the X-bar Convention. This is also guaranteed according to Jackendoff's (1977b, pp. 104-105) analysis of English demonstratives as syntactic constituents of  $N'''$ .

## 2.4 SUMMARY

Noun phrases (NPs) are groups of (one or more) words which most typically function as subject, object, and complement. The structure of NPs consists of either a pronoun or a head-noun and various types of pre- and postnominal modifiers. Head-nouns are different according to the type of modifiers they may accept. Such differences of head-nouns are associated with a set of binary features, which according to the HFC principle (introduced in 1.3.3), must be carried from their dominating NPs.

Prenominal modifiers consist of three categories : demonstrative, quantifier, and prenominal adjective. Among these, demonstratives can occur with quantifiers. Like prenominal modifiers, postnominal modifiers are also of different types which fall into three categories. The first category consists of postnominal adjectives. The second category comprises restrictive prepositional phrases and possessive phrases. Finally, the third category is formed from those such as relative clauses. Postnominal modifiers require linking morphemes to attach to their head-nouns. This linking morpheme appears as -e (or -ye) for postnominal adjectives, prepositional phrases, and possessives. For restrictive relative clauses, the linking morpheme is in the form of -i (or -?i).

The internal structure of NPs also varies according to their status as definite or indefinite (distinguished by features [+Definite] and [-Definite] respectively).



Definite NPs are further divided into two types, distinguished as having  $[+Common]$  or  $[-Common]$  features.

$[+Common]$  definite NPs can have, in addition to their head-noun, prenominal modifiers of the categories demonstrative, quantifier, and prenominal adjectives, and postnominal modifiers of the types postnominal adjective, possessive, prepositional phrase, and relative clause.

Unlike  $[+Common]$  definite NPs, those of the type  $[-Common]$  can have, as their modifiers, only quantifiers, appositive phrases, and appositive relative clauses.

Indefinite NPs are also of two types, distinguished as having  $[+Generic]$  or  $[-Generic]$  features. Indefinite NPs with  $[+Generic]$  can contain modifiers of the categories (prenominal and postnominal) adjective, appositive phrases, and appositive relative clauses. The internal structure of  $[-Generic]$  indefinite NPs also differs depending on whether they are marked as  $[+i]$  or  $[-i]$ . Those with  $[+i]$  feature can have prenominal adjectives and must be marked by the indefinite marker -i. Unlike these,  $[-i]$  indefinite NPs can have quantifiers, postnominal adjectives, appositive phrases and appositive relative clauses.

As the first category of prenominal modifiers, demonstratives are those such as in 'this' and un 'that', which occur before any other prenominal modifiers in their possible cooccurrences. These modifiers are identified in traditional grammars differently as adjectives, pronouns,

and a type of 'vague words'. Such identification is shown to be incorrect. A more satisfactory analysis of demonstratives is the one presented in this study, that they are N'''-modifiers.

### CHAPTER THREE : ADJECTIVES

#### 3.1 INTRODUCTION

One of the most common ways of specifying (the reference of) nouns in Persian is to modify them with adjectives. Because of such functions, adjectives belong to a large open-ended category of words, which vary considerably according to their morphological, syntactic, and semantic characteristics. A very typical characteristic of these modifiers is that they occur within NPs, closer than any other types of modifiers (introduced in 2.1.2) to head-nouns.

Adjectives (particularly those of English) have long been the centre of controversial discussions in generative studies. For example, since the publication of Chomsky's (1957) Syntactic Structures there have emerged at least three general theories (to be discussed in 3.1.3) concerning the syntax of attributive adjectives in English.<sup>1</sup> Furthermore, the meaning and the semantic functions of English adjectives have also been the subject of numerous studies such as, for instance, Vendler (1968) and Givón (1970).

However, in Persian, in spite of a large number of traditional grammars, the available generative studies on

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1. On the basis of such numerous and controversial studies for English adjectives, I certainly do not agree with Sussex (1974), p. 111, that "... the syntax of adjectives is perhaps one of the less controversial issues in contemporary transformational grammar."

adjectives are restricted to very few works, among them Vajdi (1976). In the light of these, the present chapter addresses itself to Persian adjectives and their problems. For this purpose, an introduction including the definition of adjectives, and a survey of these modifiers in both traditional and generative grammars is presented below. After this, an analysis of the morphological structure of adjectives (presented in section 3.2) will be followed by the syntactic structure of these modifiers on the basis of their **four** primary characteristics (in section 3.3). This will then be followed by discussion of strings of adjectives and their formation (in section 3.4).

### 3.1.1 Definition

The category adjective has been defined variously by different grammarians. These definitions vary in that they cover different aspects of adjectives. To clarify this, three typical types of such definitions suggested for Persian adjectives, and problems which may arise from each of them, will be discussed briefly below. Having in mind these problems, a more satisfactory definition will be presented later.

The first type of definition is that in which adjectives are defined according to meaning and their semantic functions. This type of definition can be found in almost all traditional grammars<sup>1</sup> dealing with the 'part of speech'<sup>2</sup> of Persian.

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1. See, for instance, Gharib et al (1950a), p.47; and also Kian (1978), p. 49.

2. The number of word-classes under the title →

To discuss problems arising from these semantically-based definitions, it is necessary to quote one of the authorities, as follows.

"An adjective is a word which is added to nouns to express the state or quality of the nouns."<sup>1</sup>

Semantically-based definitions of the kind just presented are not accurate nor satisfactory and present real problems, since "we do not at present have sufficiently precise techniques for delimiting and classifying the meaning of words."<sup>2</sup> Furthermore, it will also be discussed later how words which belong to other categories than adjectives may be used as adjectivals to modify nouns. As an example, compare the NP in (1), where the noun rāh 'road' is used as an adjectival modifying postnominally the head-noun polis 'police(man)', with that in (2), with the adjective āgel 'wise' as the postnominal modifier of the head-noun polis 'police(man)', as follows.

(1) polis - e rāh  
(police) (road)

'the road police(man)' (ie, traffic policeman)

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→ 'parts of speech' in Persian Grammar varies from six to eight and is rarely over eight. Each word-class can usually be divided into smaller classes, according to their structure and also their meaning. The most widely accepted classes of the parts of speech are : Noun, Adjective, Verb, and Particle. See Bateni (1977), pp. 69-74.

1. Khanlari (1973), p. 65. (Translation is my own).
2. Gleason, Jr. (1965), p. 116.

- (2) polis - e āgel  
(wise)

'the wise policeman'

The second type of definition suggested for adjectives is based on morphological facts. Adjectives, in this view, are considered as words which can fall into certain morphological patterns or, put differently, accept certain inflectional morphemes. The category of adjective in Persian is thus characterized as one which can receive comparative and superlative affixes, as illustrated in (3) and (4) below for adjectives xub 'good' and bad 'bad', respectively.

- (3) xub 'good', xub -tar 'better', xub -tarin  
'best'

- (4) bad 'bad', bad -tar 'worse', bad -tarin  
'worst'

However, defining adjectives on the basis of their morphological similarities causes problems too. Adjectives in Persian, unlike some other word-classes such as, for instance, verbs in infinitive form, can not be exclusively distinguished by their morphological structure.<sup>1</sup> For example,

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1. Bateni (1969). p. 147, writes "the term 'adjective' is a semantic term, and not a syntactic one. According to the structure, there is in many cases no clear-cut border among the word-classes noun, adjective, and adverb; and a word can in the syntactic system of the language take all the three functions... To distinguish these three word-classes, we can not use [only] morphological criteria because the form →

not all adjectives take the inflectional morphemes of comparison : -tar 'more' and -tarin 'most'. This point is neglected in almost all traditional grammars discussing comparative and superlative forms, perhaps because these grammars are usually concerned with general points and, in most cases, fail to account for the precise use of the language,<sup>1</sup> particularly, in the spoken form. Examples below are given to clarify cases where adjectives are not used in comparative or superlative forms.

(5a) mo?allem -e bā?adab  
(teacher) (polite)

'the polite teacher'

(5b) mo?allem -e bā?adab-tar

'the more polite teacher'

(5c) bā?adab-tarin mo?allem

'the most polite teacher'

(6a) mo?allem -e engelisi  
(teacher) (English)

1. 'the English teacher'

2. 'the teacher of English'

(6b)\* mo?allem -e engelisi-tar

(6c)\* engelisi-tarin mo?allem

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→ of the word in different functions is the same."  
(Translation is my own).

1. For more discussion on the failure of traditional grammars to describe the precise use of the language, see Bateni (1977).

As illustrated by the examples above, although adjectives like bāʔadab 'polite' can freely accept morphemes of comparison, adjectives such as engilisi 'English', for instance, are not normally used in comparative and superlative forms. Some further examples of such unacceptable comparative and superlative adjectives are as follows.

(7a) pesar-e irāni 'the Iranian boy'  
(boy) (Iranian)

(7b)\* pesar-e irāni-tar

(7c)\* irāni-tarin pesar

(8a) māsin-e ālmāni 'the German car'  
(car) (German)

(8b)\* māsin-e ālmāni-tar

(8c)\* ālmāni-tarin māsin

Adjectives such as irāni 'Iranian' in (7) and ālmāni 'German' in (8) belong to the particular semantic class which refers to absolute cases.

Having carefully examined the form of adjectives used in cases of comparison in the spoken form of Persian, it must be pointed out that the simple form of adjectives (ie, adjectives without any morpheme of comparison) may in certain contexts convey the meaning which is usually associated with their comparative form. In other words, the simple form of adjectives may, only in the spoken language, be substituted for comparative forms. As this is rather a matter of



discourse analysis and needs a great deal of information to be provided by the context about the noun to be modified by the simple form of adjectives (instead of the comparative form), the question will not be discussed here further, but, examples will be given as follows.

- (9) in do ketāb har-do xub -and. kodum  
 (this)(two) (book) (both) (good) (are) (which)  
 be nazar-e to beh-tar -e ?  
 (to) (idea-of) (you)(better) (is)

'these books are both good. Which one  
 do you think is better?'

- (10a) in yeki xub -e  
 (one) (is)

'this one is good'

- (10b) in yeki beh-tar<sup>1</sup>-e

'this one is better'

In the examples above, sentences (10a) with xub 'good', the adjective in the simple form, and (10b) with beh-tar 'better, the adjective in the comparative form, are both

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1. The adjectives beh-tar 'better' is the comparative form of the earlier adjective beh 'good', which in present-day Persian (see 'Language Under Study' in 1.2) is used only in the inflected forms beh-tar 'better' and beh-tarin 'best'. In synchronic studies of present-day Persian, these two inflected forms, ie, beh-tar 'better' and beh-tarin 'best', are therefore, treated as 'irregular' comparative and superlative forms respectively of the adjective xub 'good' (see also Boyle (1966), p. 21.).

suitable answers to questions such as (9). In other words, the adjective xub 'good' in the simple form is synonymous with its comparative form beh-tar 'better', in this context. Notice that the particular linguistic context required for these cases is that presented in (9).

From the analysis presented above, and also the fact that some adjectives are not used in comparative and superlative forms, it is plain that definitions based on morphological structure, such as the one mentioned earlier, are not precise enough nor adequate to distinguish adjectives from other word-classes; as Quirk et al (1972) put it with reference to English, "... we cannot tell whether a word is an adjective by looking at it [ie, the morphological form] in isolation."<sup>1</sup> Furthermore, the superlative form of adjectives, particularly in the spoken form of the language, may also be formed by the comparative (that is, the adjective with the comparative morpheme -tar 'more') followed by the complement phrase az hame 'than all'.<sup>2</sup> This type of superlative (with the complement phrase az hame 'than all'), unlike the ordinary superlatives (which are formed by the superlative morpheme -tarin 'most'), occurs postnominally. Examples are given below to clarify this matter.

- (11) in beh-tarin dust-e man -e  
       (this)(best) (friend-of)(I)(is)  
                   'this is my best friend'

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1. Quirk et al (1972), p. 231.

2. See also Tisdall (1959), p. 20.

- (12) in dust-e man beh-tar az hame -ast  
 (better)(than) (all) (is)  
 'this is my best friend'

The two examples (11) and (12) with the adjective beh-tarin 'best' and the adjective phrase beh-tar az hame 'better than all' respectively, are synonymous for native speakers of Persian. The syntactic structure of these types of superlative will be discussed further in section 3.3.

Finally, the third type of definition suggested for the category adjective is based on syntactic criteria. This type of definition seems more 'powerful'<sup>1</sup> and more satisfactory than the other two types mentioned earlier, but needs further restrictions. To see this, consider first the definition given below.

"Adjectives are lexemes or other expressions whose most characteristic feature is that they can occur more freely than other open-class expressions as modifiers of nouns within nominals!"<sup>2</sup>

Definitions of the type mentioned above are too broad to specify just the class adjective, since other 'lexemes' or 'expressions' in Persian may also cooccur with head-nouns to modify them within NPs. For instance, it has already been shown (in 2.2.2) how genitive constructions in Persian resemble NP-constructions with adjectives in

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1. The term 'powerful' is used here in the sense it is used by generative grammarians, particularly by Chomsky (1957), to evaluate 'all and only' forms of the language.

2. Lyons (1977b), p. 448.

that they both consist of postnominal modifiers which are attached to their head-nouns by linking morphemes. Postnominal modifiers involving adjectival constructions and those with possessives are, of course, of different categories. NP-modifiers involving adjectival constructions must be adjectives, whereas those of possessive constructions are nouns. As a reminder of such similarities and differences between adjectival constructions and NPs with possessives, an example of each type is presented in (13) and (14) below, respectively.

(13) ketāb -e xub                    'the good book'  
       (book)        (good)

(14) ketāb -e pesar                    'the boy's book'  
       (book)        (boy)

Such arguments support the claim made earlier that syntactically based definitions of the type mentioned above, as they illustrate general cases of adjectives as NP-modifiers, do not sufficiently distinguish adjectives from, for instance, nouns, if used as NP-modifiers. Therefore, adjectives in this study are further distinguished as having particular syntactic characteristics. These characteristics are dealt with in detail in section 3.3.

### 3.1.2 Adjectives in Traditional Grammars

The category of adjective and its subdivisions is one of the major concerns of almost all traditional grammars. In these grammars, the term 'Adjective' is usually used to

refer to the different types of NP-modifiers which are distinguished in this study (in 2.1.2) as adjectives, quantifiers (including numerals), demonstratives, etc.<sup>1</sup>, all of which are considered to be similar in their (semantic and syntactic) functions as NP-modifiers. Among these different types of modifiers, only one (referred to in traditional grammars as sefat-e tousifi or sefat-e bayāni 'explanatory adjective'<sup>2</sup>) which typically takes linking morphemes to occur postnominally, is the same as the category of adjective (with all its unique characteristics, see section 3.3) discussed in the present chapter. Referring only to this one type, there follows a brief survey of adjectives in traditional grammars.

There is a serious attempt in traditional grammars to classify adjectives both by their meaning and their morphological structure, such that semantic subclasses can be identified by their morphological forms, and vice versa. For instance, sefat-e nesbi 'relative adjective' (a subclass of sefat-e bayāni 'explanatory adjective') which is generally defined as modifying its head-noun by relating it to a person, thing, or place,<sup>3</sup> is distinguished by having endings such as -i (in esfahāni 'from Esfahan' and āsemāni 'from sky, holy').

However, such an identification of (somewhat) related

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1. See, for instance, Khanlari (1973), pp. 179-183.

2. See, for instance, Kian (1978), p. 50.

3. Gharib et al (1950a), p. 60.

semantic and morphological subclasses of adjectives can not be wholly satisfactory for two reasons. The first reason stems from problems in determining the meaning of adjectives and distinguishing them from other categories of modifiers. As mentioned earlier, there are cases in Persian (such as that presented previously in (1)) where certain nouns can also function as modifiers and convey adjectival meaning. The second reason comes from the inconsistent morphological forms of Persian adjectives with respect to a particular semantic subclass. As an example, it is already shown (in 3.1.1) that simple forms of adjectives may, only in the spoken form, also convey the meanings usually associated with their comparative forms (that is, adjectives with the suffix -tar 'more'), providing enough information is given previously. A similar case also exists for superlative adjectives in morphologically simple forms, of both spoken and written forms of the language. Such cases of superlatives will be discussed in detail in section 3.3.

Besides the two reasons given above for the imprecise traditional classification of adjectives, traditional grammarians have often included in their consideration words which (1) no longer exist in (the spoken or written forms of) present-day Persian, or (2) are used but with different (semantic, syntactic, and morphological) functions from true adjectives. From such numerous cases of the first type in traditional grammars are words like zarrine 'golden' (from the noun zar 'gold'), pašmine 'woollen' (from the

noun paśm 'wool'),<sup>1</sup> tarsā 'cowardly' (from the noun tars 'fright'), kānā 'mineral' (from the noun kān 'mine'),<sup>2</sup> and golrox 'beautiful' (from two nouns gol 'flower' and rox 'face').<sup>3</sup> Corresponding to these, adjectives which are usually used in (both spoken and written forms of) present-day Persian are : talāʔi 'golden' (instead of zarrine 'golden'), paśmi 'woollen' (instead of paśmine 'woollen'), tarsu 'cowardly' (instead of tarsā 'cowardly'), maʔdani 'mineral' (instead of kānā 'mineral'), and zibā 'beautiful', qaśang 'beautiful', or xośgel 'beautiful' (instead of golrox 'beautiful').

Examples of the second type of adjective in traditional grammars (which is used in present-day Persian, but with different functions) are those such as guyande 'speaker', āmuz(e)gār 'teacher', and honarpiše 'artist'. Examples such as these can not be true adjectives (in present-day Persian), since they do not, for instance, take morphemes of comparison or intensifiers (as discussed in section 3.3). Thus, corresponding to āmuz(e)gār, for instance, the following forms are not acceptable.

(15)\* āmuz(e)gār-tar

(16)\* āmuz(e)gār-tarin

(17)\* xeili āmuz(e)gār

Examples such as āmuz(e)gār 'teacher' function in present-day Persian, in fact, as common nouns. They can,

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1. See, for instance, Kian (1978), p. 55.

2. See, for instance, Ghrib et al (1950a), p.139.

3. Khayyampour (1955), p. 35.

for instance, be used as the head of [+i] indefinite NPs or [-Singular] definite NPs. They can also take adjectives as their modifiers. The following examples are given to clarify this.

- (18) āmuz(e)gār-i (unjā bud)  
(teacher) (there)(was)  
'a teacher (was there)'
- (19) āmuz(e)gār-hā 'the teachers'
- (20) amuz(e)gar-e mehrabun  
(kind)  
'the kind teacher'

Hence, on the basis of such observations, it can be concluded that traditional grammarian's classification of Persian adjectives can not be satisfactory. This fact was one of the major motivations to conduct section 3.2 of this chapter to present a comprehensive morphological classification of adjectives used in the spoken language.

### 3.1.3 Adjectives in Generative Grammars

The syntax of adjectives has been one of the controversial issues in generative grammars. Considering the source of English adjectives, these generative grammars present three general theories. The first theory (as in Chomsky (1957), Smith (1961), and Vendler (1968)) derives all attributive adjectives transformationally from their corresponding predicatives. According to such analyses, NPs such as (21), with the attributive adjective beautiful, are derived from deep structures like (22) below.



(21) the beautiful girl

(22) the girl (who) is beautiful.

The second theory (as in Bolinger (1967), Levi (1973) and Siegel (1980)) distinguishes adjectives of two sub-classes : (1) those which are generated only attributively, and (2) those which are produced predicatively but can, via transformations, also occur attributively. To clarify this, consider attributive and predicative occurrences of adjectives tall and criminal in the following examples. Notice that, unlike tall in (23), the attributive adjective criminal in (24a) could not have come from a deep structure like (24b).

(23a) the tall lawyer

(23b) the lawyer (who) is tall.

(24a) the criminal lawyer

(24b)\* the lawyer (who) is criminal.

The third theory (as in Jackendoff (1977b)) generates attributive and predicative adjectives separately, as determined in the deep structure by distinctive syntactic features. According to such analyses, the two adjectives tall and criminal in (23a) and (24a), for instance, are differentiated such that the latter, but not the former, lacks a feature (like  $\left[ +\text{Attributive} \right]$ ) associated with the attributive function of adjectives.

From these three theories, the first generative model, which is also applied by Vajdi (1976) to derive Persian attributive adjectives from their predicatives, will be

discussed further as follows. To begin with, let us first discuss the machinery of this theory for the derivation of English attributive adjectives and, then, examine its application to Persian.

According to the first theory, adjectives can only be produced by the base rules as predicatives. Predicative adjectives will then derive via transformational operations, usually called WHIZ-deletion and adjective-preposing (or T-adjective-front),<sup>1</sup> their corresponding attributives, as demonstrated for the adjective tall, below.<sup>2</sup>

(25a) the man who is tall.

(25b)\* the man tall

(25c) the tall man

As illustrated above, sentence (25a), the source of (25c), contains a relative clause with the adjective tall as its predicate. Undergoing the WHIZ-deletion transformation, the sentence in (25a) is changed to (25b) which, in

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1. See, for instance, Levi (1973), p. 332; and Sussex (1974), p. 129.
  2. In Chomsky (1957), p. 72, the rule deriving attributive adjectives from their predicatives is a special transformation called 'T-adj' which converts any string of the form : 'T-N-is-Adj' into the corresponding NP of the form : 'T-Adj-N'. Then, for various reasons, it is suggested (in Smith (1961), for instance) that the derivation of attributive adjectives must, instead of the 'T-Adj', involve transformational rules of WHIZ-deletion and adjective preposing with the functions demonstrated in examples (25a-c) above.

turn, undergoes the adjective-preposing operation to form (25c).

As one of its main aims, this machinery simplifies the formulation of selectional restrictions between nouns and adjectives (in standard transformational models such as Aspects (1965)), for selectional restrictions of attributive adjectives such as tall in (25c), for instance, are the same as those of their corresponding predicatives.<sup>1</sup> Thus, instead of having two sets of selectional restrictions for attributive and predicative adjectives, one would only need selectional restrictions of predicative adjectives to predict those of attributives.

However, such a theory has, as Bolinger (1967, p. 2) observes, considerable shortcomings. One of these is that, although the (be-predication) theory can explain the attributive and predicative functions of adjectives like tall (in the example above), it fails to account for many attributive adjectives that can never be predicatives. Examples of some of these attributive adjectives are the following .

(26a) a total stranger

(26b)\* a stranger (who) is total.

(27a) a rural policeman

(27b)\* a policeman (who) is rural.

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1. Ruwet (1973), pp. 269-270.

2. For more examples of such cases, see Levi (1973), p. 332.

(28a) a medical man.

(28b)\* a man (who) is medical.

Furthermore, Bolinger (1967, p. 4) also observes that there are some predicative adjectives that can seldom or never be used attributively, at least in their predicative sense. Examples of these are the predicative adjectives asleep and sorry of the following phrases.

(29a)\* an asleep girl

(29b) the girl (who) is asleep.

(30a)\* a sorry girl

(30b) the girl (who) is sorry.

Such unacceptable occurrences of predicative (in examples (26-28)) and attributive (in examples (29-30)) adjectives, among other equally important reasons,<sup>1</sup> argue rather strongly that the derivation of attributive adjectives by means of transformational machinery of the first theory (discussed above) is simply unsatisfactory.

However, regardless of such weaknesses of the theory, Vajdi (1976, pp. 197-204) has followed the English transformationalists of that era and made attempts to derive all attributive adjectives of Persian from their corresponding predicatives. In her view, surface structure phrases

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1. For discussion of semantic as well as syntactic failure of such a (be-predication) theory for deriving attributive adjectives, see Siegel (1980), pp. 57-63.

such as (31b) are derived from the deep structure illustrated by (31a) below.

(31a) pesar pesar gadboland -e  
(boy) S (tall) (is) mad.  
(boy) S (tall) (is) (came-he)

(31b)    pesar-e qadboland umad  
                       'the tall boy came'

Such derivation of Persian attributive adjectives gives rise to the same kind of problems as those of English (discussed above). For instance, there are, in Persian, adjectives which can be used attributively, but not predicatively, at least with the same range of meanings. These cases of attributive-only adjective of Persian are dealt with in broad detail in 3.3.1.

On the weight of such arguments, it can be concluded that the predicative adjectives of neither Persian nor English can be claimed satisfactorily to be the source of their corresponding attributives. Thus, as a more plausible alternative to Vajdi's (1976) analysis, the theory to be developed in this study treats Persian adjectives as base-generated constituents of NPs. It is, of course, not the concern of this study to deal with Persian predicative adjectives, but, as the theoretical orientation (see 1.3) indicates, they must also be produced by base rules.

### 3.2 MORPHOLOGICAL CLASSIFICATION

## An examination of the morphological structure of adjectives

in Persian suggests that these modifiers fall into certain morphological classes. These classes are, in this study, called 'Simple', 'Complex', and 'Compound'.<sup>1</sup> Simple adjectives are lexical items consisting of a single morpheme,<sup>2</sup> not analysable into smaller units. Examples of these adjectives are sabz 'green', derāz 'long', and kutāh 'short'.

Complex adjectives are those formed from nouns or simple adjectives and affixes<sup>3</sup> and those in the form of so-called 'participles'. Examples of complex adjectives are : zāponi 'Japanese' from the simple noun zāpon 'Japan' and the suffix -i, nārāhat 'uncomfortable' from the prefix nā- 'un-' and the simple adjective rāhat 'comfortable', and also fahmide 'wise', the participle form of the verb fahmidan 'to understand'. Each type of complex adjectives is discussed separately in 3.2.1 below.

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1. Rubinchik (1971), p. 63, refers to these three classes of adjective as 'simple', 'derivative' and 'compound' respectively.

2. The term 'morpheme' in generative grammars is usually used for the minimal segmental units of syntax (see Huddleston (1976), p. 170). These units are of two kinds : 'lexical' and 'grammatical'. Lexical morphemes are those from the open-ended class of lexical categories in the grammar. Thus, the word ruz 'day', for example, is considered as a monomorphemic lexical item and ruzāne 'daily' is a word formed from the lexical morpheme ruz 'day' and the grammatical morpheme -āne, respectively.

3. See Gharib et al (1950a), pp. 64-65.

Finally, compound adjectives<sup>1</sup> are those adjectives analysable into usually two free morphemes of either a noun and an item from one of the categories of noun, adjective, participle, and the present stem of a verb, or a simple adjective or adverb and the present stem of a verb. As an example, consider the compound adjectives puldār 'rich' from the noun pul 'money' and dār, the present stem of the verb dāstan 'to have, to own', bozdel 'cowardly' from two nouns boz 'goat' and del 'heart', and qadboland 'tall' from the noun qad 'height' and the simple adjective boland 'long' respectively. Compound adjectives can be further divided into subclasses, as discussed in 3.2.2.

### 3.2.1 Subclasses of Complex Adjectives

The class complex adjective, as defined above, has four subclasses. These are listed and discussed below.

- I. Those in participle form, such as poxte 'cooked, experienced' from the verb poxtan 'to cook'.
- II. Those formed from nouns and suffixes, such as dardnāk 'painful' from the noun dard 'pain' and the suffix -nāk, and engelisi 'English' from the noun engelis 'England' and the suffix -i.
- III. Those formed from nouns and prefixes, as bisavād 'illiterate' from the noun savād 'literacy' and the prefix bi- 'without', and porru 'cheeky' from

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1. The notion 'compound', distinct from 'complex', is adopted from Lyons (1977b), pp. 534-535, as "... one whose stem is formed by combining two or more stems (with or without morphological modification)".

the noun ru 'face' and the prefix por- 'full'.

- IV. Those formed from the simple adjectives and the prefix nā- 'un-', as nārāhat 'uncomfortable' from the simple adjective rāhat 'comfortable' and the prefix nā- 'un-'.

1. The first subclass of complex adjectives consists of participle forms. A participle form, when functioning as an adjective, "loses its tense meaning and acquires a qualitative or thematic significance."<sup>1</sup> Adjectives of this type have all the four syntactic characteristics of a typical adjective, to be discussed in section 3.3. They can, for instance, take intensifiers and/or morphemes of comparison.

The participle form is formed from the past stem of the verb and the suffix -e. Examples are fahmide 'educated, wise' from fahmide, the past stem of the verb fahmidan 'to understand', and rafte 'gone', from raft, the past stem of the verb raftan 'to go', and the suffix -e. The relationship between adjectives in participle form and passive verbs are not, however, lexically regular, for the passive form of a considerable number of verbs can not normally be used as an adjective in present-day Persian. To clarify the matter, consider the following examples.

| (32) | <u>VERBS</u>                    | <u>PASSIVES</u> | <u>ADJECTIVES</u>               |
|------|---------------------------------|-----------------|---------------------------------|
| a.   | <u>fahmidan</u> 'to understand' | <u>fahmide</u>  | <u>fahmide</u> 'wise, educated' |
| b.   | <u>goftan</u> 'to say, to tell' | <u>gofte</u>    | <u>          </u>               |

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1. Rubinchik (1971), p. 68.



|                                         |               |       |
|-----------------------------------------|---------------|-------|
| c. <u>xaridan</u> 'to buy'              | <u>xaride</u> | _____ |
| d. <u>sāxtan</u> 'to build,<br>to form' | <u>sāxte</u>  | _____ |

As shown above, the participle forms of the verbs in (32b-d), unlike fahmide 'wise, educated', the participle form of the verb fahmidan 'to understand' in (32a), can not normally be used as adjectives in present-day Persian. To separate the two subclasses of participle into those which can also function as adjectives, and those which can not, the available test is simply to use them in NPs as postnominal modifiers of appropriate head-nouns. Such a test for the adjective fahmide 'wise, educated' and the participle umade (of the verb umadan 'to come'), for instance, would be as follows :

(33) mard-e fahmide 'the wise man'  
(man) (wise)

(34)\* mard-e umade

The reason for the grammaticality of (33) and ungrammaticality of (34) is that participle forms of verbs can not occur in NPs as postnominal modifiers unless they can also function as adjectives.

Adjectives in participle form may sometimes have meanings different from those of corresponding verbs.<sup>1</sup> For instance, the participle form of the verbs gereftan 'to take, to arrest' and oftādan 'to fall', that is gerefte

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1. See also Rubinchik (1971), p. 68.

and oftāde, when used as adjectives have the meanings 'sad' and 'modest' respectively. To clarify this, consider the meaning of gerefte (the participle form of the verb gereftan 'to take, to arrest') as participle and adjective in the following sentences (35) and (36) respectively.

(35) u mard -o gerefte bud  
 (he)(man) -DO (arrested)(was)  
 'he had arrested the man'

(36) u mard-e gerefte -?i bud  
 (sad)  
 'he was a sad man'

The function of gerefte 'sad' as an adjective (in participle form) of the sentence (36) can also be tested by using the intensifier xeili 'very' as a sort of premodifier, as follows.

(37) u mard-e xeili gerefte -?i bud  
 'he was a very sad man'

The participle forms of verbs which can not function as adjectives (such as gofte and sāxte, the participles of the verbs goftan 'to tell, to say' and sāxtan 'to build' respectively, of examples (32) above) may also be used as (a type of) noun. Thus, gofte (the participle form of goftan 'to tell, to say'), for instance, has the meaning 'utterance', 'claim', etc. , when used as a noun. Such functions as participles and nouns of a form like gofte which can not function as an adjective, are illustrated in

the examples below.

- (38) ali gofte ke ...  
 (Ali)(has said)(that)  
 'Ali has said that ...'
- (39) in gofte-ye ali -ye ke ...  
 (this)(claim-of) (is)  
 'this is Ali's claim that ...'

The participle form gofte functions in (38) as a finite verb, and in (39) as the head of the possessive construction gofte-ye ali 'Ali's claim'.

The participle form of verbs when functioning as adjectives may take negative verbal prefixes,<sup>1</sup> such as na- 'un-'. Examples are napoxte 'uncooked, raw' and našoste 'unwashed, dirty' from participle forms of the verbs poxtan 'to cook', and šostan 'to wash, to clean' and the prefix na- 'un-'.

II. Complex adjectives of the second subclass, ie, adjectives formed from nouns and suffixes, are of different types.<sup>2</sup> Each type is recognized by the kind of suffix the noun takes. Productive suffixes<sup>3</sup> are -i, as in emrikā?i 'American' (from emrikā 'America'), -nāk, as in dardnāk 'painful' (from dard 'pain'), and -āne, as in dustāne 'friendly' (from dust 'firend'). Nouns which form these adjectives, if they end with a vowel, take euphonic

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1. Lambton (1953), p. 144.

2. See Sho'ar and Hakemi (1969), pp. 40-41; and also Gharib et al (1950a), pp. 64-65.

3. Rubinchik (1871), p. 64.

elements of [ʔ] or [g] between their final vowel and the suffixes. Examples are kānādāʔi 'Canadian' (from the noun kānādā 'canada') with the glottal stop [ʔ] as its euphonic element, and haftegi 'weekly' (from hafte 'week') and baččeqāne 'childish' (from bačče 'child') with the euphonic [g].

III. The third subclass of complex adjectives consists of those formed from nouns and prefixes. Examples of such forms are bāʔadab 'polite' (from the prefix bā- 'with' and the noun ʔadab 'politeness, courtesy'), biččāre 'miserable' (from the prefix bi- '-less' and the noun čāre 'way'), benām 'famous' (from the prefix be- 'with' and the noun nām 'name, fame'), porru 'cheeky' (from the prefix por- '-ful' and the noun ru 'face, cheek'), nāmard 'dastard, cowardly' (from the prefix nā- 'un-' and the noun mard 'man'), and gabeledidan 'visible' (from the prefix gabele- '-able' and the infinitive form of the transitive verb didan 'to see').<sup>1</sup> Among the prefixes of these adjectives, bā- 'with', bi- '-less', and gabele- '-able' are very productive.

The prefixes bā- and bi- may both be added to the same noun (though not together) to form adjectives of a semantically positive and negative kind respectively. In general, prefixes such as bā- 'with', be- 'with' and por- '-ful' form semantically positive adjectives and

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1. See also Lambton (1953), p. 107; and Sho'ar and Hakemi (1969), pp. 40-41.

those such as bi- 'without'<sup>1</sup> and nā- 'un-' give negative meaning to adjectives.<sup>2</sup> For example, the two adjectives bāsavād 'literate' and bisavād 'illiterate' are of the semantic kinds positive and negative respectively, formed from the two prefixes bā- and bi- and the noun savād 'literacy'. So are the two adjectives benām 'famous' and binām 'unknown, anonymous' formed by the positive prefix be- 'with' and the negative prefix bi- '-less' with the noun nām 'name, fame'.

Complex adjectives formed by the prefix qābele- '-able' can take the negative prefix geire- 'in-' before their positive prefix qābele-. Thus, for instance, adjectives qābelexordan 'edible' and qābeledidan 'visible' can also be used with the negative prefix geire- forming

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1. Lambton (1953), p. 105, when discussing comparative and superlative forms of 'compound' adjectives, writes that those adjectives formed by the prefix bi- '-less' "... do not logically admit of a comparative or superlative." Contrary to her statement, as linguistic forms can not necessarily be made to conform to logical rules, adjectives of semantically negative kinds including those formed by the negative prefix bi- '-less' are, in fact, frequently used in both the spoken and written forms of present-day Persian with the comparative and superlative morphemes -tar 'more' and -tarin 'most', respectively, for example, bičāretar 'more miserable' and bičāretarin 'most miserable'.

2. Rubinchik (1971), p. 64.

geireqābelexordan 'inedible' and geireqābeledidan 'invisible', respectively.

IV. Finally, the fourth subclass of the morphological classification is complex adjectives formed from simple adjectives and the prefix nā- 'un-'. These adjectives are easily distinguished from the other types already dealt with because they are all from one morphological type, ie, they all have nā- as their initial syllable. Examples are nārāhat 'uncomfortable' and nāsenavā 'deaf', from nā- and simple adjective rāhat 'comfortable', and senavā 'able to hear', respectively.

### 3.2.2 Subclasses of Compound Adjectives

Compound adjectives fall into six different subclasses. Two of these subclasses have two types of structure. That is, the noun which is defined (in section 3.2) as the necessary element in the structure of some subclasses of compound adjectives is either the first element or it occurs as the second element. These types are dealt with under each subclass separately. To clarify such morphological structures further, different subclasses of compound adjectives are first listed and then discussed as follows.

- I. Those formed from two nouns, as bozdel 'cowardly' from the two nouns boz 'goat' and del 'heart', and kallexar 'stubborn' from the two nouns kalle 'head' and xar 'donkey'.
- II. Those formed from nouns and adjectives, as qadboland 'tall' from the noun qad 'height'

and the simple adjective boland 'long'.

- III. Those formed from nouns and the participle form of verbs, as delāzorde 'hurt' from the noun del 'heart' and the participle form of the verb āzordan 'to hurt'.
- IV. Those formed from nouns and the present stem of verbs, as puldār 'rich' from the noun pul 'money' and the present stem of the verb dāstan 'to have, to own'.
- V. Those formed from simple adjectives and the present stem of the verbs, as badandiš 'malicious, ill-wishing' from the simple adjective bad 'bad, wicked' and the present stem of the verb andišidan 'to think'.
- VI. Those formed from adverbs and the present stem of verbs, as zudranj 'easily offended, touchy' from the adverb zud 'soon, quickly' and the present stem of the verb ranjidan 'to be offended, annoyed'.

I. The first subclass of compound adjectives is that formed from two nouns. Nouns used in the formation of these adjectives<sup>1</sup> belong to the morphological category of simple noun in the lexicon and are usually, as Lambton (1953) puts it, "in juxtaposition"<sup>2</sup> order. Examples are sarvqad 'tall (like cypress-tree)' from two nouns sarv 'cypress-tree' and qad 'height', sangdel 'stone-hearted, cruel' from two nouns sang 'stone' and del 'heart'.

The other type of these adjectives is formed when

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1. See also Sho'ar and Hakemi (1969), p. 40; and also Kian (1978), pp. 61-62.

2. Lambton (1953), p. 104.

two nouns take the preposition be 'to, toward'.<sup>1</sup> For example, the adjective sar be havā 'careless' is a compound adjective of this sort formed from two nouns, sar 'head, top' and havā 'air, weather', with the preposition be 'to, toward' between them. Such adjectives are not common in the language and are usually used only in the spoken form.

II. Secondly, one of the common ways to form compound adjectives in Persian is to use a noun and an adjective together. These compound adjectives are of two types of structure. The noun is either the first element in the compound structure or it occurs as the second element. Both types are very productive in the language. Examples of the type formed from adjectives preceding nouns are zardrang 'yellow-coloured, yellow' from the adjective zard 'yellow' and the noun rang 'colour', bolandqad 'tall' from the adjective boland 'long' and the noun qad 'height', and sanginvazn 'heavy-weight, heavy' from the adjective sangin 'heavy' and the noun vazn 'weight' respectively. The meaning of compound adjectives of this type may differ slightly from that of the sum of their two components : noun and simple adjective.<sup>2</sup> For example, compound adjective javānmard 'generous, chivalrous' has a slightly different meaning from the combination javān 'young' and mard 'man' or the modificational phrase mard-e javān 'the young man'. Another example is the compound adjective gerānbahā 'precious',

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1. Gharib et al (1950a), p. 62.

2. Bateni (1969), pp. 141-142.



from gerān 'expensive' and bahā 'value'.

Adjectives and their following nouns can sometimes form compound words which are used as nouns in the language.<sup>1</sup> As an example, compounds derāzquš 'long-ear, donkey', formed from the adjective derāz 'long' and the noun quš 'ear', and pir(e)mard<sup>2</sup> 'old(man)', formed from the adjective pir 'old' and the noun mard 'man', are used as a type of compound noun. Thus, the compound pir(e)mard 'old(man)', for instance, when used as a noun has, like simple nouns, only one primary accent which is on its final syllable, and can accept the indefinite marker -i (see 2.2.3) and/or the plural suffix -hā (see 2.1.1b).<sup>3</sup> These forms are illustrated in (40), (41), and (42) below respectively.

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1. For details of such constructions, see compound nouns of classes (16) to (20) in Beheshti (1976), p. 86.
  2. The optional e in compound forms such as pir(e)mard 'old(man)' is used as the euphonic element to facilitate the pronunciation of words. See also Vajdi (1976), p. 225, fn. 1.
  3. Vajdi (1976), pp. 225-227, compares these types of compound nouns with corresponding NP-constructions (formed from the same nouns and adjectives) and uses the primary accent, the indefinite marker -i, and the plural morphemes as the criteria to correctly conclude that compound forms of the type 'Adj + N', such as pir(e)mard 'old(man)' mentioned above, function as nouns and differ in many ways from NPs with the structure 'N +e Adj', such as mard-e pir 'the old man'.

- (40) pir(e)'mard                                'old(man)'  
(41) pir(e)mard-i                                'an old(man)'  
(42) pir(e)mard-hā-?i                                'old(men)'

The number of these compound nouns in comparison with compound adjectives (discussed above) is quite few in the language.

Compound adjectives of the second type of this subclass, are (as mentioned earlier) those formed from nouns followed by simple adjectives. Simple adjectives in these compounds are usually one of the three : boland 'long', kutāh 'short', and derāz 'long', as in the examples qadboland 'tall', qadkutāh 'short', and dastderāz 'aggressive' from nouns qad 'height' and dast 'hand' and the three adjectives boland 'long', kutāh 'short', and derāz 'long' respectively. The use of these types of compound adjective has become so frequent in the language that their corresponding simple forms are hardly ever used. The following examples are given to clarify this.

- (43) un        pesar-e qadboland    dust-e        man -e  
           (that)(boy)    (tall)            (friend-of)(I) (is)  
                                          'that tall boy is my friend'
- (44) un pesar-e bolandqad    dust-e man -e  
                                          (tall)  
                                          'that tall boy is my friend'
- (45)\* un pesar-e boland    dust-e man -e  
                                          (tall)

In the sentences above, the property of tallness is

expressed in three different ways. This property, in sentence (43) is expressed by a compound adjective of the type formed from a noun followed by an adjective, ie, qadboland 'tall'; in sentence (44) it is in the form of a compound adjective formed from an adjective followed by a noun, ie, bolandqad 'tall'; and finally, in sentence (45) it is expressed by the simple adjective boland 'long'. Of these examples, the NP in (43) has the highest degree of acceptability; in (44) it is usually acceptable; but (45) is not acceptable at all to native speakers of Persian.

III. The third subclass of compound adjective is the class in which adjectives are formed from nouns and the participle form of verbs.<sup>1</sup> The structure of these adjectives, like those of the second subclass, are of two types. That is, the noun in the structure of these adjectives can either be the first element or the second. Examples of the first type are compound adjectives delāzorde 'hurt', from the noun del 'heart' and the participle form of the verb āzordan 'to hurt, to annoy', and sālخورde 'old', from the noun sāl 'year' and the participle form of the verb xordan 'to eat' respectively. Compound adjectives of the second type are šekastedel 'broken-hearted, disappointed', from the participle form of the verb šekastan 'to break' and the noun del 'heart', azordexāter 'annoyed, offended', from the participle form of the verb āzordan 'to hurt, to annoy'

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1. See also compound adjectives of classes (47) to (51) in Beheshti (1976), p. 88.

and the noun xāter 'mind, thought'.

Some adjectives can be formed in both ways. For instance, compound adjectives delāzorde 'hurt' and āzordedel 'hurt' (both formed from the noun del 'heart' and the participle form of the verb āzordan 'to hurt, to annoy') are adjectives of the first and second type respectively. This is not, of course, the case for all adjectives of this subclass, for although compound adjectives such as, for instance, āsoftehāl 'disturbed, distracted' (formed from the participle form of the verb āsoftan 'to disturb, to agitate' and the noun hāl 'state, condition') are widely used by native speakers, its corresponding form of the first type (ie, \*hālāsofte) does not exist in the language. These two types of compound adjectives are not productive and, hence, there are not many adjectives formed in these ways in the language.

IV. Compound adjectives of the fourth subclass are formed from nouns and the present stem of verbs.<sup>1</sup> This is a very productive pattern in the language. As an example, consider compound adjectives puldār 'rich', from the noun pul 'money' and the present stem of the verb dāstan 'to have, to own', and saršenās 'famous', from the noun sar 'head' and the present stem of the verb šenāxtan 'to know, to recognize'. The present stem of the verb xordan 'to eat',

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1. See also Sho'ar and Hakemi (1969), p. 41; and Lambton (1953), p. 105.

when occurring with nouns to form compound adjectives of this type, is considered as a special case in which the vowel phoneme /o/ undergoes some phonological operations and changes to /ā/. For example, compound adjectives alafxār 'grass-eater' and qustxār 'meat-eater' are adjectives of this subclass which are formed from alaf 'grass' and qust 'meat', with xor, the present stem of the verb xordan 'to eat', and phonological changes of the vowel /o/ to /ā/.

V. The fifth subclass of compound adjective consists of those formed from simple adjectives and the present stem of verbs.<sup>1</sup> Examples of such adjectives are saxtqir 'strict, sever' from the simple adjective saxt 'difficult, hard' and the present stem of the verb gereftan 'to get, to obtain', xosbin 'optimist, hopeful' from the simple adjective xos 'happy, cheerful' and the present stem of the verb didan 'to see, to perceive'. The number of these adjectives is relatively few in both spoken and written language.

VI. Finally, compound adjectives of the sixth subclass are those formed by adverbs and the present stem of verbs.<sup>2</sup> Adverbs used in the formation of these adjectives are of the morphologically simple subclass and not, for instance, from derivatives. These adverbs are usually from the semantic class 'adverb of time'.<sup>3</sup> Examples are zudranj 'easily offended, touchy' from the adverb zud 'soon, quick' and the

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1. See also sho'ar and Hakemi (1969), p. 41.

2. See also Beheshti (1976), pp. 86-87.

3. For details of these adverbs, see Beheshti (1976), pp. 152-155.

present stem of the verb ranjidan 'to be offended, annoyed', and tondro 'swift, fleet' from the adverb tond 'fast, quickly' and ro, the present stem of the verb raftan 'to go' respectively. The pattern underlying these adjectives is not productive.

From now onward, the term 'adjective' used in the following discussions refers to all the different types of adjective discussed in the morphological classification, unless a certain type is specified.

### 3.3 SYNTACTIC CHARACTERISTICS

Following the discussion of different types of definition of adjectives and the problems which may arise from them (in 3.1.1), it now remains to examine the category of adjective in Persian and define it on the basis of its particular characteristics. These distinguishing characteristics will be dealt with in the present section.

The category of adjective has, in general, four primary characteristics and some secondary ones. Primary characteristics are those of very common categorial identification by which adjectives are recognized. Secondary characteristics are those which are not common to all types of adjective.<sup>1</sup>

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1. In terms of 'markedness' theory, primary characteristics are unmarked, whereas, the secondary are marked for a particular category like adjectives. Separating different word-classes from each other, secondary characteristics are cases of overlapping which are also referred to as syntactic-semantic homonyms. Such characteristics, as Quirk et al (1972), p. 258, put →

To discuss these further, the primary characteristics of adjectives in Persian are first listed below, and are then dealt with separately in the following subsections.

(46) Primary Characteristics

- a. Adjectives can be used attributively.
- b. Adjectives may be used predicatively.
- c. Adjectives may take intensifiers such as xeili 'very, much' and besiyar 'much'.
- d. Adjectives may take comparative and superlative forms. (superlative forms of adjectives are prenominal modifiers).

As indicated above, the primary characteristics may not all be found in one adjective. In other words, adjectives have, in fact, fundamental variations according to their primary characteristics. Those with all the four primary characteristics are referred to in the discussion as 'true' adjectives. The least requirement for a word to be identified as an adjective, in this study, is two primary characteristics including the attributive function (ie, the first primary). Details of each of the four primary characteristics (listed in (46) above) are presented as follows.

3.3.1 Attributives

As the first (essential) primary characteristic, adjectives must function attributively. In this function, adjectives

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→it, "complicate the task [of distinguishing word-classes]".

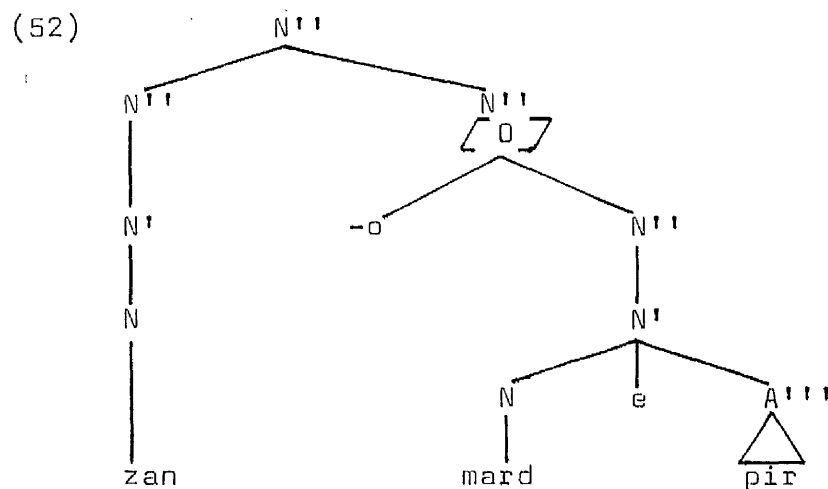
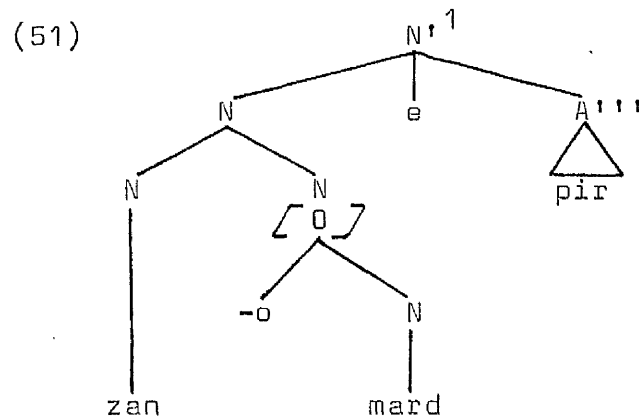
take linking morphemes (discussed in 2.1.2b) to attach to their head-nouns when in postnominal position. The postnominal adjectives are in simple and comparative forms. The attributive position of superlative adjectives is before their head-noun. As prenominal modifier, superlative adjectives (as mentioned in 2.1.2a) do not take any linking morpheme. Examples below are given to clarify the attributive position of adjectives within NPs.

- (47) dust-e xub 'the good friend'  
(friend) (good)
- (48) dust-e beh-tar 'the better friend'  
(better)
- (49) beh-tarin dust 'the best friend'  
(best)

Adjectives in attributive function can also be used to modify more than one noun in coordination. In such cases, attributive adjectives occur after the coordinated nouns. NPs with adjectives and coordinated head-nouns are often syntactically ambiguous between two structures associated with coordinated head-nouns and coordinated NPs. For instance, consider the following NP, with the adjective pir 'old' modifying postnominally the coordinated head-noun zan-o mard 'woman and man', which is ambiguous between having either of the two syntactic structures illustrated in (51) and (52).

- (50) zan -o mard-e pir  
(woman)(and)(man) (old)  
'the old man and woman'





As illustrated, the structural difference between (51) and (52) is that the coordination in the former involves two head-nouns zan 'woman' and mard 'man'; but, in the latter, is between their dominating N'. However, the surface structures of both (51) and (52) is the same as given in (50). To clarify the surface structure ambiguities of such syntactic structures, the semantic interpretations required for (51) is 'the old woman and the

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1. For the formation of similar coordination in English, see Gazdar (1980a,b).

old man' and for (52) is 'the woman and the old man'.

To disambiguate such surface structures as (50), native speakers normally use a pause between the first noun and the conjunctive particle, if the coordination is between NPs, and not head-nouns. Thus, demonstrating pause with commas, the surface structure of the two coordinations in (51) and (52) would, in the colloquial language, look like (53) and (54) below respectively.

(53) zan -o mard -e pir  
'the old woman and old man'

(54) zan, va<sup>1</sup> mard -e pir  
'the woman and old man'

Ambiguities between the surface structure of coordinations of the types illustrated by (51) and (52) can also be pointed out by using any type of prenominal modifier (see 2.1.2a) for either of the two coordinated elements. For instance, using the demonstrative in 'this' as the prenominal modifier of either of the modified nouns zan 'woman' and mard 'man' of the phrase in (50), the resulting phrases will be as in (55) and (56) below.

(55) in zan -o mard -e pir  
'this old woman and old man'

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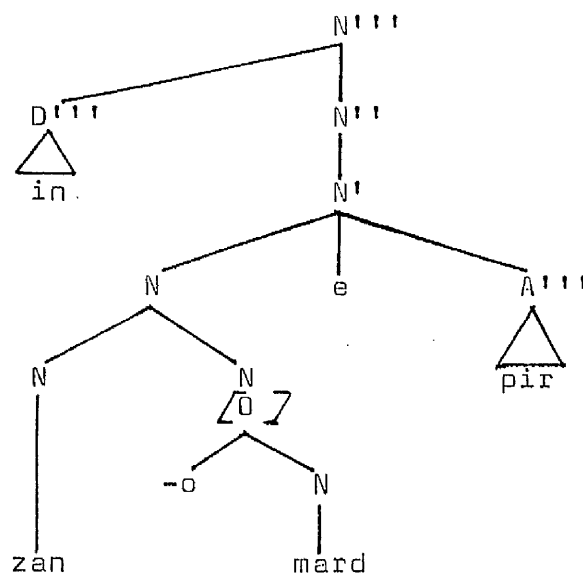
1. The particle va 'and' is used in the written language, and is equivalent to -o 'and' of the spoken language. This particle is also used in the spoken language, when preceded by any sort of pause.

(56) zan -o in mard-o pir

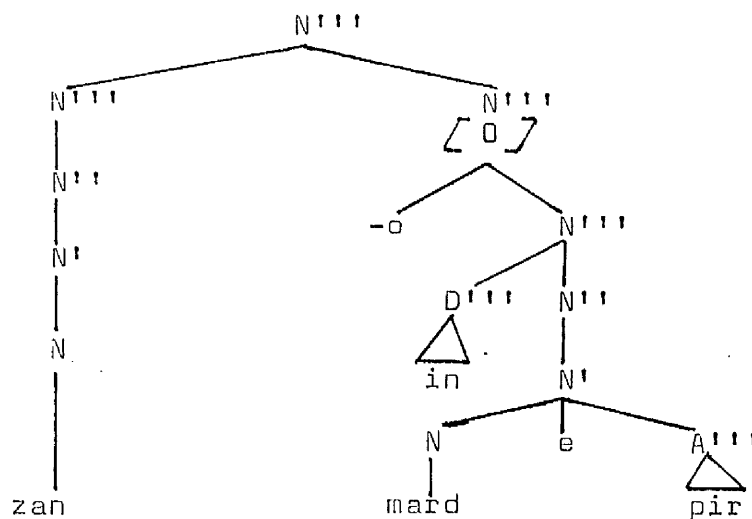
'the woman and this old  
man'

As the consequence, the two resulting phrases (55) and (56) are no longer ambiguous. The coordination is understood to be between two nouns in (55) and two NPs in (56). To clarify the syntactic structure of such phrases, the following (57) and (58) present structures associated with (55) and (56) respectively.

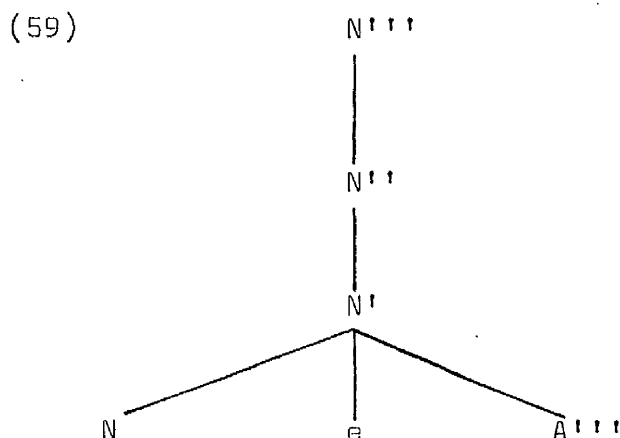
(57)



(58)



To explain the syntactic structure of attributive adjectives (in structures such as (51) and (52) and also (57) and (58) above) the very important point must be made that adjectives are  $N'$ -complements. That is, the only syntactic category (of NP) available to dominate adjectives is  $N'$ . This claim is, of course, supported by the syntactic fact mentioned earlier that adjectives occur within NPs, closer than any other type of modifier (introduced in 2.1.2). Such occurrences of adjectives strongly argue that they must belong to the lowest nominal category (of the nominal  $N'''$ ,  $N''$ ,  $N'$ ). Such a syntactic category to dominate adjectives can thus only be  $N'$ . Accepting this, the following schema for the syntactic structure of NPs with postnominal adjectives is given to terminate discussion of attributive function as the essential primary characteristic of adjectives.



### 3.3.2 Predicatives

The second primary characteristic of adjectives is that they may be used predicatively. In this function, adjectives

occur as the complement of a copula and make a statement about the whole NP. As an example, consider the predicative position of the adjective gerd 'round' in sentence (60) below and compare it with its attributive use in (61).

(60) miz gerd -e  
(table)(round)(is)  
'the table is round'

(61) miz -e gerd  
'the round table'

Although all adjectives can be used attributively, they can not all function predicatively. This, in fact, separates the category adjective into two groups : those which can be used both attributively and predicatively; and those which occur only attributively.<sup>1</sup> In the following, examples of both groups are given.

(62a) mo?allem -e qadboland  
(teacher) (tall)  
'the tall teacher'

(62b) un mo?allem qadboland -e  
(that) (is)  
'that teacher is tall'

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1. Similar to this division of Persian adjectives, Quirk et al (1972), divide English Adjectives into three subclasses : (1) both attributive and predicative, (2) attributive only, and (3) predicative only. Examples of the third subclass (ie, predicative-only adjectives), such as 'loath' (in 'the woman is loath' vs. \*'the loath woman'), have their Persian equivalents as adjectives of the first group which can be used both attributively and predicatively.

(63a) mo?allem -e qabli  
 (teacher) (former)  
 'the former teacher'

(63b)\* un mo?allem qabli -ye  
 (that) (is)

In the examples above, the adjective qadboland 'tall' is one of the first group which can be used in both syntactic positions, attributive and predicative, as in (62a) and (62b) respectively. Unlike qadboland 'tall', the adjective qabli 'former' is of the second group which, although it can modify nouns as mo?allem 'teacher' (in (63a)) attributively, can not be used predicatively. More examples of the type attributive-only adjectives are given below.

(64a) jam? -e kol 'grand total'  
 (total) (all)

(64b)\* jam? kol -e  
 (is)

(65a) dādgāh -e jonhe 'criminal court'  
 (court) (criminal)

(65b)\* dāgāh jonhe -ast  
 (is)

(66a) niru -ye hava?i 'air force'  
 (force) (airy)

(66b)\* niru hava?i -ye  
 (is)

In the examples above, adjectives kol 'grand, major, all' in (64a), jonhe 'criminal' in (65a), and hava?i 'airy'

in (66a) are attributives of the type which can not be used predicatively.<sup>1</sup> The unacceptable predicative occurrences of these adjectives are illustrated in (64b), (65b), and (66b) respectively.

Adjectives of the first group (that is, attributive-only) can easily be distinguished from those of the second group by using intensifiers such as xeili 'very'. In general, attributive-only adjectives do not accept any kind of intensifier. To clarify this, examples (64a), (65a), and (66a) above, are examined with xeili 'very' as follows.

(67)\* jam? -e xeili kol

(68)\* dādgāh -e xeili jonhe

(69)\* niru -ye xeili havā?i

Some adjectives which can be used in both syntactic positions do not have the same meaning in predicative position as they have when occurring attributively. As an example, consider the attributive and predicative occurrences of the adjective qadimi 'old' and engelisi 'English' in the following phrases.

(70a) dust -e qadimi-ye man  
(friend) (old-of) (I)

'my old friend' (ie, my friend  
of long standing)

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1. It is worth mentioning that lexical forms corresponding to these attributive adjectives exist in the language, as the adverb kollan or betore kolli 'generally', and nouns jenāyat 'crime' and havā 'air', respectively.

(70b) dust -e man qadimi -ye  
(is)  
'my friend is old'

(71a) moʔallem -e engelsi -ye man  
(teacher) (English -of)(I)

1. 'my teacher of English'  
2. 'my English teacher'

(71b) moʔallem -e man engelisi -ye  
(is)  
'my teacher is English'

As shown above, the attributive adjective gadimi 'old' in (70a) does not specify the noun dust 'friend' as being an old person, as it does in (70b). Instead, gadimi 'old' in example (70a) specifies the length of friendship : 'my friend of long standing'. Such a friend, therefore, is not necessarily an old person. The adjective engelisi 'English', too, can not be used with the same range of meanings in both attributive and predicative positions, as shown in (71a) and (71b) respectively.

Since predicative occurrences of adjectives are beyond the scope of this study (see section 1.1), predicative adjectives will not be discussed here. Hence, when referring to adjectives in the rest of the thesis, reference will be to attributive adjectives only, unless otherwise stated. For the purpose of further simplification, adjectives which will be used in the following discussion are chosen from those that can function both attributively and predicatively.



### 3.3.3 Intensifiers

As the third primary characteristic, adjectives may take intensifiers such as xeili 'very, much', besiyār 'much', and fogolāde 'very much, extraordinary'.<sup>1</sup> In this function, intensifiers normally occur between head-nouns and postnominal adjectives, after the linking morpheme. For example, consider the following NPs.

- (72) doxtar -e xeili xošgel  
(girl) (very)(beautiful)  
'the very beautiful girl'

- (73) pesar -e besiyār bāhuš  
(boy) (much) (intelligent)  
'the very intelligent boy'

Intensifiers may, particularly in the stylistic form of the spoken languages, also occur before head-nouns and their postnominal adjectives. Such a stylistic form for the NP in (74) would be like (75) below.

- (74) u pesar -e xeili xub -i -ye  
(he)(boy) (very) (good) (is)  
'he is a very good boy'

---

1. Accepting intensifiers is generally restricted to adjectives of [-Gradable] semantic feature which usually refer to absolute cases. Thus, the adjective emrikāʔi 'American' (in the NP : pesar -e emrikāʔi 'the American boy'), for instance, can not take intensifiers such as xeili 'very', as xeili emrikāʔi 'very American' (in \*pesar -e xeili emrikāʔi 'the very American boy' or the stylistic \*xeili pesar -e emrikāʔi 'the very American boy').

- (75) u xeili pesar -e xub -i -ye  
 'he is a very good boy'

Intensifiers in their stylistic use, illustrated in (75) above, although they have a different position in the word-order of NPs, have generally the same semantic significance as they normally do in their characteristic position (between head-noun and postnominal adjective). In other words, the use of intensifiers such as xeili 'very' after and before head-nouns (as in (74) and (75) above) has, for the native speakers, no difference in meaning whatsoever.

Intensifiers can, typically in the spoken form of the language, be repeated to achieve more intensification or emphasis. Such coordinations do not require any conjunctive particle such as va 'and' or pause between the intensifiers. An example of this with the intensifier xeili 'very' is given below.

- (76) in sang xeili sangin -e  
 (this)(stone)(very) (heavy)(is)  
 'this stone is very heavy'

- (77) in sang xeili xeili sangin -e  
 'this stone is very very heavy' (ie,  
 this stone is too heavy).

Of intensifiers, however, those like foqolāde 'very much, extraordinary', which are intuitively understood by native speakers to be emphatic, can not be repeated as intensifiers of the same adjective. Thus, corresponding

to examples (76) and (77), sentences such as (79) below with repeated intensifier foqolāde 'very much; extraordinary' are not normally grammatical.

- (78) in sang foqolāde sangin -e  
'this stone is extraordinarily heavy' (ie, this stone is too heavy).

- (79)\* in sang foqolade foqolade sangin -e

Prenominal adjectives, that is superlatives, can not take intensifiers.<sup>1</sup> To clarify this, consider the following examples.

- (80)\* xeili xoṣgel-tarin doxtar  
(most beautiful)(girl)

- (81)\* xeili bāhuṣ-tarin pesar  
(very) (most intelligent)(boy)

These unacceptable NPs comprise, beside their head-nouns, the intensifier xeili 'very' and superlative xoṣgel-tarin 'most beautiful' and bāhuṣ-tarin 'most intelligent' in (80) and (81) respectively.

Considering the syntactic distribution of intensifiers, it is quite obvious that they must be included in the syntax of adjective phrases, as a type of preadjectival modifier. The problem arises when determining the particular syntactic

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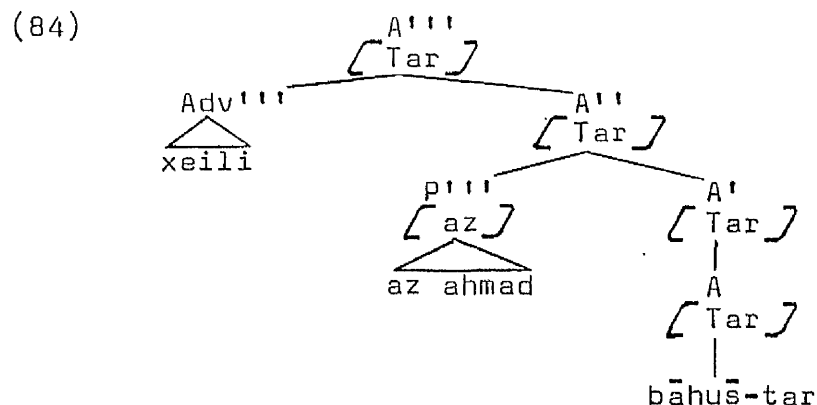
1. This can be explained semantically by the fact that superlative adjectives usually refer to extreme cases which therefore do not need to be intensified.

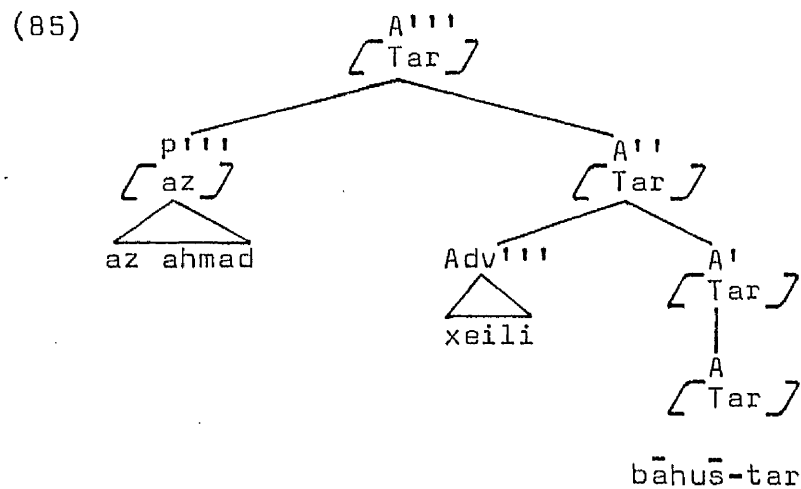
category of adjective phrases to dominate intensifiers. Examples such as the following argue contradictorily that intensifiers belong to the syntactic category higher (in (82)) and lower (in (83)) than that dominating PPs, in adjective phrases. Such contradictory arguments arise because intensifiers can both precede and follow complement phrases (PPs) of comparative adjectives.

- (82) man xeili az ahmad bāhuš-tar  
 (I) (very) (than)(Ahmad) (more intelligent)  
 -am  
 (am)  
 'I am much more intelligent  
 than Ahmad'

- (83) man az ahmad xeili bāhuš-tar -am  
 'I am much more intelligent  
 than Ahmad'

Leaving the category A' (of adjective phrases) to dominate the lexical category A and (following Gazdar (1979)) features like [Tar] to designate comparatives, the syntactic structure of adjective phrases in (82) and (83) would in accordance with the PS-grammar used in this study, look like (84) and (85), respectively.





Adjective phrases in (82) and (83) above and their corresponding syntactic structures illustrated in (84) and (85) respectively do little to determine the syntax of intensifiers. One way to assign the most plausible syntactic structure for intensifiers is to use the cross-category generalizations made available by the theory of 'X-bar' syntax between quantifiers and intensifiers. Among such generalizations are the syntactic-semantic similarities between the two categories (quantifier and intensifier). Syntactically, they are similar in that both quantifiers and intensifiers modify their heads as specifiers (referred to in discussion as prenominal and preadjectival modifiers, respectively). Semantically, they both modify their heads by specifying the amount of quantity. To clarify these, compare the following examples of quantifiers and intensifiers.

(86) xeili xaste (-am) '(I am) very tired'  
(very) (tired) (am)

(87) ġand ketāb (xarid-am)  
(some)(book) (bought-I)  
'(I bought) some books'

As shown above, xeili 'very' in (86) and c̄and 'some' in (87) are both modifiers, though of preadjectival and pronominal types respectively. These different types of modifier rather similarly indicate amounts of whatever their head-nouns refer to. It is, of course, the case that quantifiers can be used to indicate countable, as well as uncountable amounts (see chapter four), whereas intensifiers always indicate uncountable and rather vague degrees of whatever quantity their head (that is, adjectives) denote. However, leaving aside such minor semantic differences as their categorial characteristics, both quantifiers and intensifiers have more or less the same semantic functions, but for different categories : intensifiers for adjectives, and quantifiers for nouns.

Employing cross-category generalizations, such similarities argue that intensifiers must be constituents of the same level of category in the PS-grammar as quantifiers are. Accepting this point, since quantifiers are argued (in chapter four) to be pronominal N''-modifiers, intensifiers can best be preadjectival A''-modifiers. Therefore, as the conclusion of this argument, it can be claimed that intensifiers are constituents of the syntactic category A'' and that (85) can best demonstrate the syntax of intensifiers.

Now, having discussed intensifiers as preadjectival A''-modifiers which in structure such as (83) above follow complement phrases, phrases like (82) in which

intensifiers precede complements of comparatives must now be accounted for as follows. Since all instances of the first type of comparative constructions (ie, those with intensifiers following complement phrases) are convertible to the second type of construction (ie, those with intensifiers preceding complement phrases),<sup>1</sup> the syntactic differences between the two types of comparative constructions can best be captured by a metarule of the following form.

$$(88) \quad \begin{array}{c} \left[ \begin{array}{c} A''' \\ \text{Tar} \end{array} \right] \left[ \begin{array}{c} P''' \\ \text{az} \end{array} \right] \left[ \begin{array}{c} A' \\ \text{Tar} \end{array} \right] \left[ \begin{array}{c} \text{Adv}''' \\ \end{array} \right] \left[ \begin{array}{c} A' \\ \text{Tar} \end{array} \right] \dots \end{array} \Rightarrow \begin{array}{c} \left[ \begin{array}{c} A''' \\ \text{Tar} \end{array} \right] \left[ \begin{array}{c} \text{Adv}''' \\ \end{array} \right] \left[ \begin{array}{c} A' \\ \text{Tar} \end{array} \right] \left[ \begin{array}{c} P''' \\ \text{az} \end{array} \right] \left[ \begin{array}{c} A' \\ \text{Tar} \end{array} \right] \dots \end{array}$$

Metarules such as (88) predict that PS-rules required for comparative constructions of adjective phrases can equally generate both types of constructions demonstrated by schemas (84) and (85) above.

### 3.3.4 Comparatives and Superlatives

The last primary characteristic of adjectives is that they may take inflectional morphemes of comparison. These morphemes are -tar 'more' for comparative and -tarin 'most'

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1. The only difference between the two types of comparative constructions is that the first type in which intensifiers precede complement phrases of comparatives (as in (82) above) bears, for some speakers, emphasis on the use of intensifiers.

for superlative forms. Some examples are bad-tar 'worse', bad-tarin 'worst'<sup>1</sup>, xub-tar 'better' and xub-tarin 'best' from simple forms bad 'bad' and xub 'good' and morphemes of comparison. As mentioned earlier, superlative adjectives, unlike simple and comparative forms, occur as prenominal modifiers.

However, since both comparative and superlative adjectives modify their head-nouns by means of comparison, there can be no difference between meanings of the two corresponding forms if comparison is between two things, two groups, etc. This, perhaps, is the reason why Long (1961) claims that :

"... with respect to meaning, superlative forms of adjectives are not greatly different from comparatives."<sup>2</sup>

Furthermore, as pointed out in 3.1.1, the comparative form of adjectives may, only in the spoken form of the language, be used instead of superlatives, providing enough information about the comparison between the modified noun and other member(s) of its class is given by the context. Following this, what is more striking is that the superlative form of adjectives, as Tisdall (1959, p. 20) also

- 
1. The [d] sound of comparative and superlative forms such as bad-tar 'worse' and bad-tarin 'worst' in the spoken form, can be assimilated to /t/. These two adjectives are then pronounced as bat-tar 'worse' and bat-tarin 'worst'. See also Lambton (1953), p. 21.
  2. Long (1961), p. 261.



observes, is hardly used in the spoken form of Persian. Instead, there are different types of comparative constructions (with comparative forms of adjectives as their heads) which convey meanings usually associated with superlative adjectives for native speakers.<sup>1</sup> Such comparative constructions will be dealt with below, but first the formation of ordinary comparatives in Persian is discussed as follows.

Comparative constructions are formed from the comparative form of adjectives and complement phrases usually containing the preposition az 'than, from, of' and NPs used as the standard of comparison. Complement phrases can normally have two syntactic positions in relation to the comparative adjectives. These positions are demonstrated by the following examples.

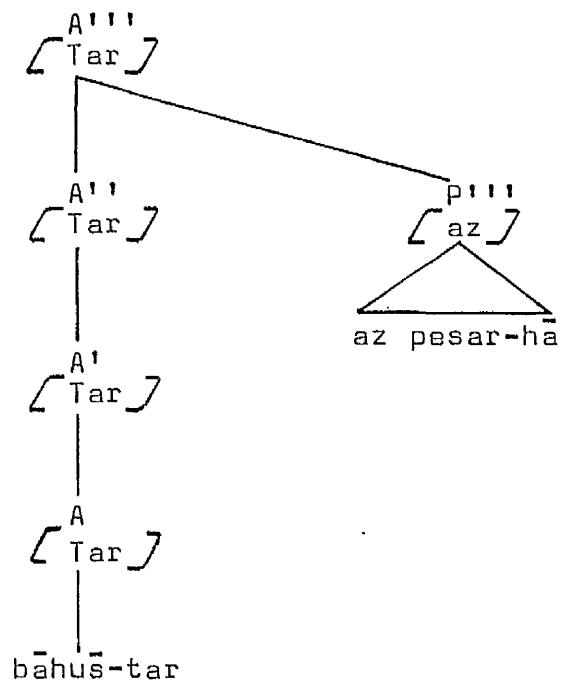
- (89) doxtar -hā bāhuš-tar az pesar-hā  
 (girls) (more intelligent) (than) (boys)  
 -nd  
 (are) 'girls are more intelligent  
 than boys'

- (90) doxtar-hā az pesar-hā bāhuš-tar -and  
 'girls are more intelligent  
 than boys'

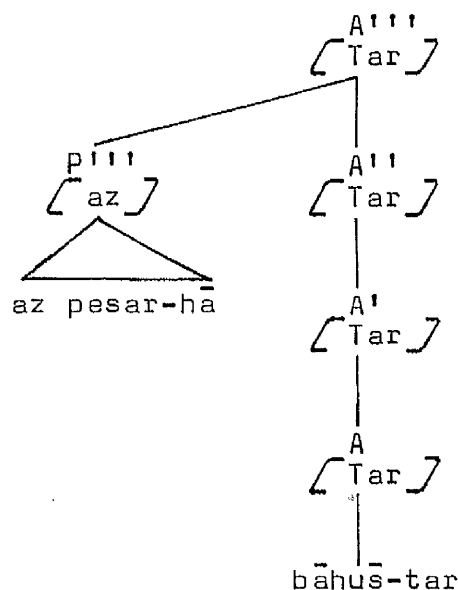
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1. See also Lambton (1953), p. 136.
  2. There are other prepositions such as tā and ke which, in the written form of the language, may rarely be used instead of az 'than' as the preposition of complement phrases in comparative constructions. See also Rubinchik (1971), p. 62.

As shown above, complement phrases of comparative construction can normally be used both following (as in (89)) or preceding (as in (90)) their comparative adjectives. Both types of comparative constructions are freely used, usually with the same meaning, in the spoken language. To demonstrate the syntactic structure of such comparative constructions, the feature  $\left[ \text{Tar} \right]$  is employed to distinguish the comparative form of adjectives from the simple and the superlative. This feature is thus introduced into adjective phrase  $A'''$  and trickles down onto the lexical category A, through head-nodes  $A''$  and  $A'$ . Having in mind that intensifiers (as discussed in 3.3.3) are  $A''$ -preadjectival modifiers and, hence, complement phrases  $A'''$ -modifiers, the syntactic structure of the comparative constructions in (89) and (90) can then be illustrated schematically as (91) and (92) below, respectively.

(91)



(92)



The difference between the two structures of adjective phrases illustrated in (91) and (92) can best be explained by metarules predicting all instances of structures like (91) from (92), and vice versa. To clarify this further, given (92), for instance, such a metarule would look like the following.

$$(93) \quad \begin{array}{c} A''' \\ [Tar] \end{array} \begin{array}{c} P''' \\ [az] \end{array} \begin{array}{c} A'' \\ [Tar] \end{array} \dots \Rightarrow \begin{array}{c} A''' \\ [Tar] \end{array} \begin{array}{c} A'' \\ [Tar] \end{array} \begin{array}{c} P''' \\ [az] \end{array} \dots$$

Returning to the points made earlier, that comparative constructions may, in the spoken language, be used instead

of superlative adjectives, consider first some examples as given below.

- (94) minā xošgel-tar az hame(-ye  
(Mina)(more beautiful)(than)(all-of)  
doxtar-hā) -st  
(girls) (is)  
'Mina is more beautiful than  
all (girls)' (ie, Mina is the  
most beautiful girl)

- (95) minā āgel-tar az baqiye -ast  
(Mina)(wiser)(than) (rest) (is)  
'Mina is wiser than the rest'  
(ie, Mina is the wisest (girl))

- (96) be šahr -i ke nasdik-tar ast beravid<sup>1</sup>  
(to)(town) (that)(nearer) (is)(go-you)  
'go to the town which is nearer'  
(ie, go to the nearest town).

As demonstrated, the comparative form of adjective when used with complement phrases such az hame 'than all',<sup>2</sup> and az baqiye 'than the rest' (as in the sentences (94) and (95) above, respectively) convey the meanings of the

- 
1. This example is taken from Lambton (1953), p.136.
  2. Beheshti (1976), p. 123, considers this type of comparative construction (with comparative adjectives and the complement phrase az hame 'than all') as superlative adjectives formed from the stem followed by the phrase -tar + az + hame 'more than all'. He then explains that these superlatives, in the spoken form of present-day Persian, are more frequently used than ordinary type of superlative which is formed from the stem of the adjective and the superlative morpheme -tarin 'most').

corresponding superlatives, that is, the preference of items in question over others of their class.<sup>1</sup> There are also cases in Persian (such as example (96) above) where the comparative form of adjectives is used with no complement phrase to achieve the meaning which is usually associated with the superlative form of adjectives.<sup>2</sup> These types of 'understood' superlative, unlike the ordinary forms of superlative (which are formed from the stem form of the adjective and the superlative morpheme -tarin 'most'), can not be used as prenominal modifiers. For instance, corresponding to adjective phrases in (94) and (95), the following are ungrammatical NPs.

(97)\* xošgel-tar az hame doxtar  
(more beautiful)(than)(all)(girl)

(98)\* āgel-tar az baqiye doxtar  
(wiser) (than)(rest)

To illustrate the syntactic differences between these types of superlative and ordinary superlatives, compare ungrammatical NPs (97) and (98) with the grammatical phrases (99) and (100) below respectively.

(99) xošgel-tarin doxtar  
(most beautiful)(girl)  
'the most beautiful girl'

(100) āgel-tarin doxtar  
(wisest)  
'the wisest girl'.

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1. Kian (1978), pp. 57-58.

2. See, for instance, Lambton (1953), p. 136.

Among these types of superlative, it is also necessary to include those adjectives which in their simple forms (ie, stem forms) have comparative or superlative meaning.<sup>1</sup> Very common examples of such cases are loan-adjectives from Arabic which, according to the morphological structure of Persian (see section 3.2), can be classed as simple adjectives, but have superlative meaning. As an example, consider adjectives biš 'much' and āli 'best, excellent' in the sentences below.

- (101a) man biš az yek sāʔat -e ke  
 (I) (much)(than)(one)(hour)(is)(that)  
 montazer-e sōmā -m  
 (been waiting-for)(you)(am)  
 'I have been waiting for you  
 for more than one hour'

- (101b) man biš-tar az yek sāʔat -e ke montazer  
 (more)  
 -e sōmā -m  
 'I have been waiting for you  
 for more than one hour'

- (102a) sām -e sōmā āli bud  
 (dinner-of)(you) (excellent)(was)  
 'your dinner was excellent'

- (102b) sām -e sōmā beh-tarin bud  
 (best)  
 'your dinner was best' (ie, your  
 dinner was excellent)

---

1. Farshidvard (1969), pp. 72-76.

In the two sentences (101a) and (101b) above, the adjective biṣ 'much' and its comparative form biṣ-tar 'more' are both used in the comparative sense. Put differently, in cases such as (102a) and (102b), the simple form of adjectives may be used where the comparative forms are normally required. Similarly, adjectives of Arabic origin such as ālī 'excellent' in (102a) can also be used in the superlative sense, interchangeably with ordinary superlatives like beh-tarin 'best' (as in (102b)). This, of course, is not the case for all instances of ālī 'best, excellent'. There are instances, such as (103) below, where the comparison is among the 'best' items, and the adjective ālī 'best, excellent' can not be used in place of superlative beh-tarin 'best', and vice versa.

(103a) u beh-tarin dust-e man -e  
           (he)(best) (friend-of)(I) (is)  
                                   'he is my best friend'

(103b)\* u ālī dust-e man -e  
               (best)

As shown, the superlative adjective beh-tarin 'best' in sentences such as (103a) is not semantically equal to ālī 'best, excellent'. This has to do with the semantic fact that ālī with the meaning 'excellent' is different from that used as the synonym of beh-tarin 'best'. To clarify this, some such semantic differences are as follows.

Assuming a semantic hierarchy among different derived

forms of a given adjectives, semantic variations for the adjective xub 'good' have roughly the following ranks.

- (104) i. xub 'good'  
 ii. xub-tar 'better', beh-tar 'better'  
 iii. xub-tarin 'best', beh-tarin 'best',  
       āli 'best'  
 iv. āli 'excellent'  
 v. āli-tar 'more excellent'  
 vi. āli-tarin 'most excellent, best'

Having such hierarchies, different functions of the adjective āli 'best, excellent' in the sentences such as (102) and (103) above can now be explained easily, in accordance with the particular rank to which the adjective belongs. For instance, in rank (104iii), the adjective āli 'excellent, best' is semantically equal to beh-tarin 'best' as is the case in sentences (102) above. Unlike this, the adjective āli 'best, excellent' in rank (104iv), is not semantically equivalent to any other adjective and therefore can not be replaced by beh-tarin 'best', for instance, in sentences such as (103).

On the grounds of such arguments, the point can be made clear that comparative and superlative senses of adjectives have much to do with semantics and, furthermore, do not always have a one-to-one relationship with comparative and superlative morphological forms (that is, the stem of simple adjectives and the morphemes -tar 'more' and -tarin 'most' respectively).

Finally, to end discussion of the comparative and



superlative forms of adjectives here, the last point to be mentioned is that these forms, like the simple form of adjectives, are normally pronounced with the primary stress on the last syllable. Thus, for example, the primary stress of the following adjectives is as follows.

- (105) a. bozorg'tar 'bigger', xub'tar 'better'  
 b. bozorgta'rin 'biggest', xubta'rin 'best'

### 3.4 STRINGS OF ADJECTIVES

Two or more adjectives can be used in coordination to modify the same noun.<sup>1</sup> The cooccurrence of adjectives in coordination is generally called a 'string'. For the consideration of strings of adjectives in Persian, observe first some examples as follows.

- (106) sandali -ye cubi -ye qermez  
 (chair) (wooden) (red)  
 'the red wooden chair'
- (107) pesar -e emrikā'i -ye qadboland  
 (boy) (American) (tall)  
 'the tall American boy'
- (108) pirhan -e kohne -vo kasif  
 (shirt) (old) (and)(dirty)  
 'the dirty and old shirt'

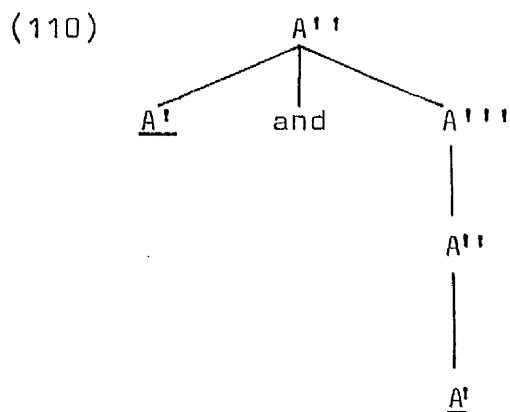
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1. For discussions on coordination and the order of adjectives in English, see Vendler (1968), pp. 121-134.

- (109) qazā -ye moqavi -yo xošmazze  
 (food) (nutritive)(and)(tasty)  
 'the tasty and nutritive food'

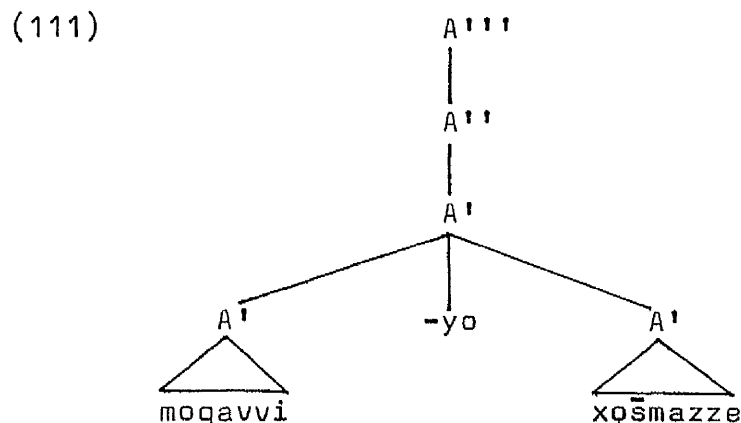
Examples such as these reveal that strings of adjectives are fundamentally of different types, according to their coordinating morphemes. These different types of structure will be dealt with separately as Broken Strings in 3.4.1 and Unbroken Strings in 3.4.2 later. For the present, the syntactic structure of coordination between adjectives will be the subject of the discussion presented below.

One of the shortcomings of Jackendoff's (1977b, p. 36) 'Uniform Three-Level Hypothesis' is, as mentioned in 1.3, that it can not explain the syntax of coordination, for the coordination of two syntactically similar categories such as, for instance  $A'$  and  $A'$ , violates the hierachic arrangement of the categories  $A'''$ ,  $A''$ , and  $A'$  for adjective phrases. Within Jackendoff's (1977b) PS-Grammar, coordination is easily possible if only it could be formed from categories of different syntactic levels, as in (110) below.



However, since coordination must involve identical categories, configurations such as (110), available in Jackendoff's (1977b) account of X-bar grammar, are simply improper.<sup>1</sup>

Furthermore, since strings of adjectives such as those in examples (106-109) above have exactly the same syntactic functions as each of their adjectives (as discussed in the following subsections), the resulting coordinated structures (referred to as 'strings', here) must therefore be from the same syntactic category as each of their coordinated elements. Such syntactic relationships between coordinated categories of the string in (109), for instance, and the resulting coordinated structure can be demonstrated roughly as follows.



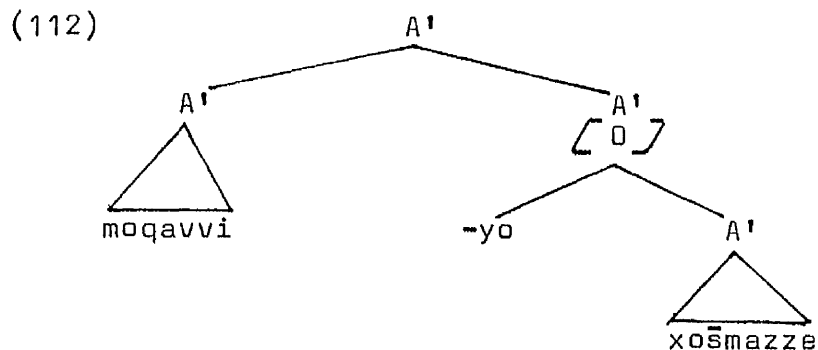
In this configuration, notice that both the adjectives moqavvi 'nutritive' and xošmazze 'tasty' belong to similar

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1. For more details of Jackendoff's (1977b) failure on the syntax of coordination, see also Jackendoff (1977b), pp. 50-53.

syntactic categories,  $A'$ , and, what is desirable, their coordination (moqavvi -yo xošmazze 'nutritive and tasty') is also within the same syntactic category, namely  $A'$ .

In search for a plausible solution (within the X-bar theory), such desirable relationship between coordinated adjectives and their coordination form can only be achieved in Gazdar's (1980a,b) analysis of coordination (introduced in 1.3.3), that "... we allow the names of coordinating morphemes to appear as features on categories, and eliminate the feature by means of a rule schema which expands such categories as the named coordinating morpheme, followed by the category."<sup>1</sup> To clarify this further, the structure schema for the syntax of the string in (109) has the following form.



Thus, adopting Gazdar's (1980a,b) analysis of coordination for Persian, strings of adjectives such as those in examples (106-109) above can easily be generated by PS-rules similar to the following, in which  $\underline{X}$  stands for any

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1. Gazdar (1980a), pp. 6-7.

syntactic category (including adjectives phrases) and α for members of the class coordinating morphemes such as -o 'and', yā 'or', etc.

$$(113) \quad \underset{x}{\left[ \right.} x \dots \underset{\left[ \alpha \right]}{x} \left. \right]$$

$$(114) \quad \underset{\left[ \alpha \right]}{x} \left[ \dots \alpha x \right]$$

The feature α can thus be spelt out as -e (or -ye if it follows an adjective ending with <sup>α</sup><sub>λ</sub>vowel) to account for the coordinating morpheme of unbroken strings (such as those in (106) and (107) above), as well as -o 'and' and various other particles for broken strings discussed below.

### 3.4.1 Unbroken Strings

Strings in which adjectives conjoin with -e (or -ye) as their coordinating morpheme<sup>1</sup> are called 'Unbroken Strings'.<sup>2</sup> Examples of such strings are given in NPs (106) and (107) of the earlier discussion. Unbroken strings in the spoken form of the language usually contain two

- 
1. Farshidvard (1969), p. 241, has a similar account for the coordinating morpheme -e as a marker indicating coordination between adjectives.
  2. Unbroken strings in English are those such as 'long Polish' (in phrases like 'long Polish word') with two adjectives 'long' and 'Polish' conjoined with no coordinating morpheme between them. For more on this sort of string in English, see Vendler (1968), p. 127.

adjectives. They may have up to three adjectives, but then the coordinating morpheme -e of the second and third adjectives will be followed by a short pause or prolongation of pronunciation.<sup>1</sup> Some examples are presented below.

(115) kot -e pašmi -ye ābirang  
 (jacket)(woollen) (blue-coloured)  
 'the blue woollen jacket'

(116) doxtar -e emrikā?i -ye siyāhpust -e  
 (girl) (American) (black-skinned)  
kātolik  
 (Catholic)  
 'the black Catholic American girl'

(117)\* doxtar -e emrikā?i -ye siyāhpust -e  
kātolik -e mehrabun  
 (kind)

The unbroken strings above, contain two adjectives in (115), three adjectives in (116), and four adjectives in (117). The string in (117) is normally not acceptable.<sup>2</sup>

Adjectives used in unbroken strings are usually of

- 
1. Some speakers of different dialects may use up to four adjectives in unbroken strings, in certain circumstances. What is interesting is that these speakers, when writing, rarely use three, and never use four adjectives in unbroken strings.
  2. The point must be emphasized here that dialect differences among the speakers are of great importance in judging the acceptability of unbroken strings of more than three adjectives.

the simple form, not comparatives or superlatives. The comparative and superlative forms (that is, adjectives with morphemes -tar 'more' and -tarin 'most', respectively), if used in coordination, require coordinating particles and therefore change the whole structure of unbroken strings to broken ones (discussed in 3.4.2). As examples of unacceptable unbroken strings with comparative and superlative forms, consider the following NPs.

- (118)    pesar -e āqel -e bāʔadab  
          (boy)       (wise)     (polite)  
                  'the polite wise boy'
- (119)\*   pesar -e āqel-tar -e bāʔadab  
                  'the polite wiser boy'
- (120)\*   pesar -e āqel -e bāʔadab-tar  
                  'the politer wise boy'
- (121)\*   pesar -e āqel-tar -e bāʔadab-tar  
                  'the politer wiser boy'
- (122)\*   āqel-tarin -e bāʔadab-tarin        pesar  
                  'the wisest politest boy'

As illustrated above, except for the unbroken string in (118), none of the examples in (119-122), with comparative and superlative adjectives, are grammatical structures.

Unbroken strings function syntactically exactly like single postnominal adjectives. For instance, they (like postnominal adjectives) always take linking morphemes to attach to their head-nouns and precede the indefinite marker

-i of the  $\left[ +i \right]$  indefinite NPs (discussed in 2.2.3). Since the examples of unbroken strings already given sufficiently demonstrate their use of linking morphemes, examples of the latter case are offered below.

- (123) mard -e engelisi -ye dadboland -i  
(man) (English) (tall)

raʔis -e baxš -e mā -st  
(head-of) (department-of)(us)(is)

'a tall English man is the  
head of our department'

- (124) gol-hā -ye germez -e qasāng -i be  
(flowers) (red) (beautiful) (to)

man dād  
(I) (gave)

'he gave me beautiful red flowers'

- (125) pirhan -e surati -ye rāhrāh -i  
(shirt) (pink) (striped)

be-tan-dāst  
(had worn)

'he had worn a striped pink  
shirt'

It is such functions which (as discussed earlier) argue for strings of adjectives to be considered as syntactically belonging to the same category as their coordinated adjectives. This, of course, holds true also for broken strings of adjectives. This type of string will be dealt in what follows.

### 3.4.2 Broken Strings

Strings in which adjectives are conjoined with particles



such as -o 'and' (or va 'and'), vali 'but', and yā 'or' as their coordinating morphemes,<sup>1</sup> are called 'broken strings'.<sup>2</sup> Examples of these are the two-adjective strings presented earlier in (108) and (109) above. Any of such coordinating morphemes, if used between two adjectives of an unbroken string (in place of their coordinating -e) will change the structure of that string into a broken one. Put differently, the occurrence of at least one of these coordinating morphemes is enough for a string to be considered as a broken one. Thus, a broken string of more than two adjectives may, in addition to these coordinating morphemes, also have -e (the coordinating morpheme of unbroken strings). This is, in fact, the case that broken strings of more than two adjectives, in the spoken language, are often used with both types of coordinating morphemes, particles and -e, as shown in examples below.

- (126)    lebās -e naxi        -ye sefid -o    boland  
           (dress) (cotton)        (white)(and)(long)  
                                      'the long and white cotton  
                                      dress'

- 
1. Coordinating particles in Persian are of many different syntactic, semantic, and phonological types. For an analysis of these particles, see Sho'ar and Hakemi (1969), pp. 68-82.
  2. Broken strings in English are those such as 'yellow and red' (in phrases like 'yellow and red flowers') with two adjectives 'yellow' and 'red' conjoined by the coordinating morpheme 'and'. A survey of English broken strings is presented in Vendler (1968).

- (127) doxtar -e irāni -ye zerang -o  
 (girl) (Iranian) (clever) (and)  
bāhuš  
 (intelligent)  
 'the intelligent and clever  
 Iranian girl'

Broken strings, if they are formed from more than two adjectives, may also contain between their first and second adjectives a short pause with or without coordinating particles. Demonstrating this short pause by commas, the string in (126), for instance, can thus be formed as follow.

- (128) lebās -e naxi, sefid -o boland  
 'the long and white cotton dress'
- (129) lebās -e naxi, va sefid -o boland  
 'the long white and cotton dress'

However, broken strings of only two adjectives can not contain as their coordinating morphemes a short pause with no particle. Examples of such strings are given below.

- (130)\* kafš -e čarmi, meški  
 (shoe) (leather)(black)  
 'the black, leather shoes'
- (131)\* pesar -e bāhuš, zerang  
 (boy) (intelligent)(clever)  
 'the clever, intelligent boy'

Like unbroken strings, broken strings can usually contain up to three adjectives. Broken strings with more than three adjectives are, in the spoken language, not normally

grammatical. For example, consider the following four-adjective broken strings.

(132)\* pirhan -e naxi -ye sefid -o boland  
 (shirt) (cotton) (white)(and)(long)  
-o qašang  
 (and)(pretty)

(133)\* pirhan -e naxi -ye sefid -o boland vali  
 (but)  
qašang

Broken strings of adjectives with the coordinating morpheme -o 'and' (or va 'and'), if used as postnominal modifiers of head-nouns in the plural form, are ambiguous between : (1) a string used as a unit modifying the head in the plural form, and (2) a string which is the result of the coordination of different adjectival modifications, involving the same head-noun but different adjectives. To clarify such ambiguities, see the following example.

(134) pirhan-hā -ye qermez -o sabz  
 (shirts) (red) (and)(green)  
 'the green and red shirts'

The two interpretations resulting from NPs such as (134) are usually :

- (135) i. shirts in red and green colours
- ii. red shirt(s) and green shirt(s)

To eliminate ambiguities of this sort for NPs like (134), speakers usually use other types of NP-modifiers such as demonstratives, for instance, for the head-noun

which is modified by strings of adjectives. Thus, for (134), the corresponding unambiguous NP with the demonstrative in 'this' is :

- (136) in pirhan-hā -ye qermez -o sabz  
(this) 'these green and red shirts'

which normally has only one interpretation : 'these shirts which are green and red'.

Adjectives in broken strings, unlike those in unbroken ones, can also be used in comparative and superlative forms, as well as in the simple form. Examples of such strings with comparative and superlative adjectives are as follows.

- (137) xošqel-tarin -o mehrabun-tarin doxtar  
(most beautiful)(and)(kindest) (girl)  
'the most beautiful and kind girl'

- (138) beh-tarin -o qerun-tarin lebās  
(best) (and)(most expensive)(dress)  
'the best and most expensive dress'

- (139) xune -ye beh-tar -o qasāng-tar  
(house) (better) (and)(nicer)  
'the nicer and better house'

As shown above, adjectives in comparative and superlative broken strings must all contain the comparative and superlative morphemes (ie, -tar 'more' and -tarin 'most') respectively.<sup>1</sup>

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1. Bolinger (1968), p. 459, discusses the redundancy of using superlative morphemes for all instances of →

As in the case of unbroken ones, broken strings of adjectives function syntactically like single adjectives (in, for instance, their coordination). They, for example, take linking morphemes to attach to their head-nouns postnominally and, like single adjectives, precede the indefinite marker -i (discussed in 2.2.3) of the  $\left[ +i \right]$  indefinite NPs. Their characteristics of taking linking morphemes and functioning like single postnominal modifiers is demonstrated by the different examples presented above. For the demonstration of their preceding the indefinite marker -i, consider the following examples.

- (140) pesar -i injā bud  
(boy) (here)(was)

'a boy was here'

- (141) pesar /-e gadboland 7-i injā bud  
(boy) (tall)

'a tall boy was here'

- (143) pesar /-e xošaxlāq -o gadboland 7-i  
(good-tempered)(and)(tall)

injā bud

'a tall and good-tempered boy  
was here'

---

→ superlative adjectives in strings, and assumes that factoring this redundancy out is the characteristic of languages in latter stages of growth. He then criticizes Otto Jespersen (1894) who believed that Latin was a superior language because it was highly inflected, and further adds that he "... did not have the benefit of recent thinking about redundancy, which holds that reminders are necessary."

In the examples above, the indefinite marker has followed: the head-noun pesar 'boy' in (140), the adjective qadboland 'tall' in (141), and the broken string of adjectives xoṣaxlāq -o qadboland 'tall and good-tempered' in (142).

### 3.4.3 Order of Adjectives

The order of adjectives in strings<sup>1</sup> is a controversial problem which usually requires classifying adjectives and/or some sort of grammatical ordering rules.<sup>2</sup> In this subsection, the natural order of adjectives in Persian will be examined by presenting examples of the same strings but with a different ordering of adjectives, as follows.

(143a) dāman -e paṣmi -ye qahve?i  
(skirt) (woollen) (brown)  
'the brown woollen skirt'

(143b) dāman -e qahve?i -ye paṣmi  
'the woollen brown skirt'

(144a) xune -ye bozorg -o qaṣang  
(house) (big) (and)(beautiful)  
'the beautiful and big house'

(144b) xune -ye qaṣang -o bozorg  
'the big and beautiful house'

- 
1. The term 'string' used in this subsection, refers to both types, unbroken and broken, unless a particular type is specified.
  2. For a summary of different approaches (within different linguistic hypotheses) to this problem in English, see Sussex (1974), pp. 114-115.

(145a) doxtar -e qadboland -e irāni  
 (girl) (tall) (Iranian)  
 'the Iranian tall girl'

(145b) doxtar -e irāni -ye qadboland  
 'the tall Iranian girl'

As shown above, the three pairs of NPs, each with the same string but with two different orders of adjectives, are all grammatical in spoken Persian. Furthermore, the two forms of each pair are also synonymous. Thus, put differently, there exists no natural order among adjectives in strings, in the spoken language. In the written language, however, there is a tendency to use adjectives which refer to inherent properties of nouns first. This tendency, unlike the case in English,<sup>1</sup> does not have grammatical significance. Hence, the two forms of strings in the above examples (such as, for instance, pašmi -ye qahve?i 'brown woollen' in (143a) and qahve?i -ye pašmi 'woollen brown' in (143b) with the inherent adjective pašmi 'woollen' and the non-inherent qahve?i 'brown') are also both grammatical in the written Persian.

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1. To account for the grammatical order of adjectives in English, Vendler (1968), pp. 85-121, classifies adjectives on the basis of their meanings into nine main classes ( $A_1$  to  $A_9$ ), and then argues for transformational rules which stipulate the order-classes of adjectives such that  $A_9$  precede  $A_8$ , and so forth. See also Hutchins (1971), pp. 43-52.

### 3.5 SUMMARY

Among the different types of definitions given for the category of adjective, the most satisfactory definition suggested in this study is that based on their primary syntactic characteristics. These primary characteristics are : (1) adjectives function attributively, (2) they may function predicatively, (3) they may take intensifiers, and (4) they may have comparative and superlative forms (superlative adjectives occur prenominally).

The morphological structure of adjectives has considerable variation which leads them to be classed under three general types : simple, complex, and compound. Simple adjectives are formed from single free morphemes, such as xub 'good'. Compound adjectives are those consisting of free and bound morphemes, such as bāʔadab 'polite' (formed from bā- 'with' and ʔadab 'politeness'). Finally, compound adjectives are those composed of two free morphemes, such as xoṣaxlāq 'good-tempered' (from the morphemes xoṣ 'good, happy' and axlāq 'temper').

Since adjectives, both prenominal and postnominal, occur closer to their head-nouns than any other modifier, they are argued here to be A'-modifiers. In postnominal position, adjectives can also have intensifiers (such as xeili 'very') which, on grounds of their cooccurrences with complement phrases of comparative constructions, are argued syntactically to be preadjectival A' or A'''-modifiers, related to each other by metarules.



The cooccurrences of two or more adjectives as modifiers of the same noun constitute 'strings', which in Persian are of two types 'unbroken' and 'broken' according to the coordinating morphemes (used between their adjectives). Unbroken strings can only have -e (or -ye) as their coordinating morpheme, and broken strings can contain a relatively large variety of coordinating morphemes, including particles such as -o 'and' (or va 'and'), vali 'but', yā 'or' and, in cases of strings with more than two adjectives, -e and/or a short pause between the first and the second adjectives.

## CHAPTER FOUR : QUANTIFIERS

### 4.1 INTRODUCTION

Among different types of NP-modifiers (introduced in 2.1.2), the status of quantifiers is one of the most controversial issues of generative grammars. For many linguists, the controversy lies in the source of quantifiers in transformational grammars (as discussed in 4.1.3). For other linguists (usually generative semanticists), the controversy is about the peculiar behaviour of quantifiers which argues that transformational rules, as sketched in models such as Aspects (1965), are not meaning-preserving, and that the level of deep structure (of the transformational grammar) should be deepened to account for semantic interpretations. Thus, with the Aspects model, semantic differences of, for instance, active/passive pairs of sentences with quantifiers can not be captured sufficiently.<sup>1</sup>

Corresponding to such problems as the relationship between syntactic generalizations and semantic interpretations, and as the alternative to the Aspects model (in contrast with generative semantics), the Extended Standard Theory (initiated by Chomsky (1972)), which generally retains the syntactic deep structure and proposes surface structure rules of semantic interpretation, explains the

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1. See, for instance, Kempson (1977), pp. 161-164.

semantic differences such as the scope of quantifiers in pairs of active/passive sentences by some sort of surface structure interpretation processes (as, for instance, Jackendoff's (1972, ch. 7) 'Moral Structure').<sup>1</sup>

Considering the importance of quantifiers in regard to the relationship between syntactic structures and semantic interpretive rules, this chapter attempts to analyse the syntactic behaviour of Persian quantifiers. Such a close examination of the syntax of quantifiers (in Persian) will, it is hoped, throw some light on general discussions involving the two levels of syntax and semantics of grammar.

To begin with, introductory discussions including the definition and the status of quantifiers in traditional and generative grammars, and also in symbolic logic is in order. Following these, the morphological classification of quantifiers is presented in section 4.2. This section is also followed by discussion of the syntax of Persian quantifiers, and an original analysis proposed for them in this study in terms of the X-bar theory (introduced in 1.3).

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1. In Jackendoff (1972), semantic interpretations contain four distinct parts; among them, the Moral Structure is reserved for the specification of the scope of logical elements such as quantifiers and referential properties of NPs.

#### 4.1.1 Definition

Quantifiers form a relatively small closed-system of words which, in general, denote a quantity when used to modify nouns. In more specific terms,

"Quantifiers define the extent to which the predication is applicable to individual members of the referent set indicated by the terms."<sup>1</sup>

Quantifiers are, as Stockwell (1977) puts it, semantically similar to adverbs used to indicate the frequency of an action, since :

"Both entities and events can be counted; the function of frequency adverbs ... is to provide for the counting of events. Quantifiers serve that function with nouns."<sup>2</sup>

In Persian, quantifiers are those words such as hame 'all' and ēand 'some' which normally function as prenominal modifiers. As mentioned in 2.1.2, these modifiers can also cooccur with demonstratives. Such cooccurrences for the quantifier hame 'all' and the demonstrative un 'that' are shown in the following examples.

(1) hame -ye un raftār-hā  
 (all) (those)(behaviours)  
 'all those behaviours'

(2) hame -ye un pesar-hā  
 (boys)  
 'all those boys'

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1. Dik (1978), p. 61.

2. Stockwell (1977), p. 58.

Quantifiers and numerals, in Persian, are very similar. They both denote quantities of whatever their head-nouns refer to, and function as prenominal modifiers. However, their differences lie in their semantics in that quantifiers, except those few like har-do 'both', denote nonspecific quantities; whereas numerals refer to a definite number of their referent set. To clarify this, consider NPs with quantifiers such as čand 'some' and numerals like do 'two' as their prenominal modifiers, such as the following :

(3) čand mard                    'some men'  
      (some)(man)

(4) do mard                    'two men'  
      (two)

Similarities such as these between the two categories, quantifier and numeral, permit numerals to be accounted for as a type of quantifier, distinguished by features like  $[+Numeral]$ , such that  $[+Numeral]$  quantifiers are numerals, and  $[-Numeral]$  ones, ordinary quantifiers. Thus, the two quantifiers of the NPs in (3) and (4) above are of  $[-Numeral]$  and  $[+Numeral]$  types, respectively.

Unlike  $[+Numeral]$  quantifiers,  $[-Numeral]$  type quantifiers are of two subcategories, according to their function as the prenominal modifier of  $[+Singular]$  NPs or  $[-Singular]$  NPs. In other words,  $[-Numeral]$  quantifiers vary in that they may quantify singular or plural nouns. Examples of both types are given below.

(5a)\* baʔzi doxtar  
(some) (girl)

(5b) baʔzi doxtar-hā 'some girls'

(6a) cānd doxtar 'some girls'  
(some)

(6b)\* cānd doxtar-hā

To distinguish these two subcategories of quantifier, those which quantify singular nouns are further marked here as [ $+Singular$ ], and those quantifying plural nouns, as [ $-Singular$ ] types. Needless to say, examples such as (4) above demonstrate the fact that [ $+Numeral$ ] quantifiers (ie, numerals) are [ $+Singular$ ], since their head-nouns must always be in the singular form. The distinction between [ $+Singular$ ] and [ $-Singular$ ] quantifiers will be used later in 4.3 to demonstrate that [ $-Singular$ ] quantifiers are nouns.

#### 4.1.2 Quantifiers in Traditional Grammars

The word-class 'quantifier' is one to which hardly any attention is paid in traditional grammars of Persian. Members of this word-class, as they have certain similarities with some or all members of other word-classes, such as numerals (discussed above) for instance, have usually been grouped as subclasses of a wider class of words called mobhamāt 'vague words'.<sup>1</sup> This wider class consists of

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1. See, for instance, Azadi-Ardakani (1970); and Kian (1978).

quantifiers, numerals, demonstratives, and even some nouns<sup>1</sup> such as šaxs 'person'. As a consequence, the word-class mobhamāt 'vague words' is introduced differently as a subclass of nouns (in Kian (1978, p. 45)), adjectives (in Farshidvard (1969, pp. 94-96)), or simply words (in Gharib et al (1950b, p. 2)) which vaguely denote the state, quality, quantity, and number of nouns. The only serious attempt in traditional grammars to subclassify members of the word-class 'mobhamāt' is the morphological division of these words into two groups 'simple' and 'compound'. These divisions, too, are not adequately defined, for the description of the language presented in traditional grammars is usually not synchronic. An example of such cases is presented in the analysis of morphologically simple quantifiers of present-day Persian, in 4.2.1.

#### 4.1.3 Quantifiers in Generative Grammars

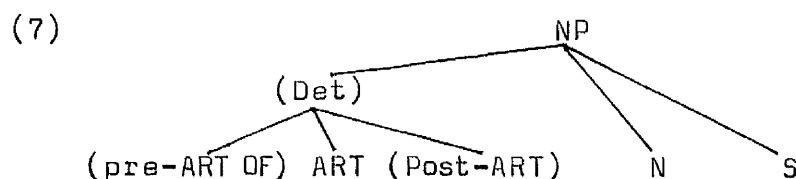
The class quantifier, as discussed earlier in 2.1, has been central issues of discussion by generative grammarians since the publication of Chomsky's Aspects (1965). What appears to be the most significant point in these discussions is the source of quantifiers. Unfortunately, none of the generative studies on quantifiers and their sources have, to the best of the writer's knowledge, been done on Persian quantifiers. It is therefore not possible to refer to any previous research in the discussion of

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1. See, for instance, Azadi-Ardakani (1970), p. 46.

Persian quantifiers except in cases where there can be a parallelism between the syntactic or semantic behaviour of Persian quantifiers and those of English. But, for the sake of providing a general theoretical background, a brief review of the proposals made to analyse the syntax of quantifiers in English is presented below. Each proposal has, of course, its own advantages and also its own problems, but details of the justification of the advantages or the array of criticisms levelled against such analyses for English are beyond the scope of this chapter and therefore will not be considered here.

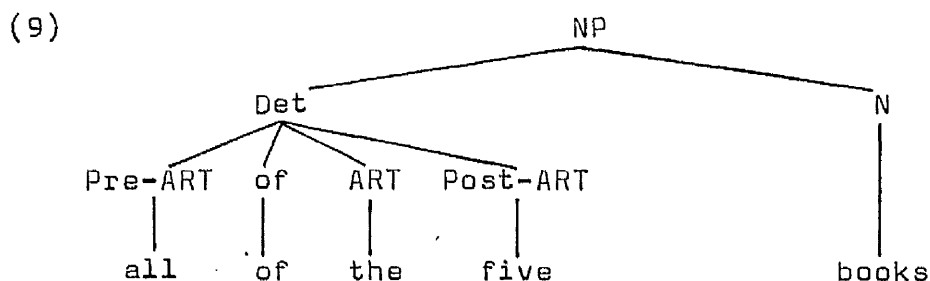
In a discussion of English quantifiers, Chomsky (1965) (and most of his followers subsequently) treated quantifiers as lexical items which are introduced by Lexical Insertion rules into positions within the structure of NPs generated by the base component of a grammar. The important issue for these linguists is the exact syntactic position of quantifiers within NPs in deep structure before the application of any transformational rule. Chomsky (1965, p. 107) appears to propose the following underlying structure.



Such an underlying structure permits the optional occurrence of English quantifiers in both pre- and post-article positions. Thus, phrases such as :



(8) all the five books  
can easily be analysed, as follows.



Among the problems with this analysis<sup>1</sup> are (i) it can not account for phrases like :

(10) each one of the boys

and (ii) since some quantifiers including numerals can occur in both pre- and postarticle positions, constructions such as (11) and (12) below could be assigned two different syntactic structures, though they are not semantically ambiguous at all.

(11) three books

(12) many books

Another proposal for English quantifiers is that made by Dean (1966)<sup>2</sup> which takes quantifier phrases from underlying partitive constructions. According to this, a phrase

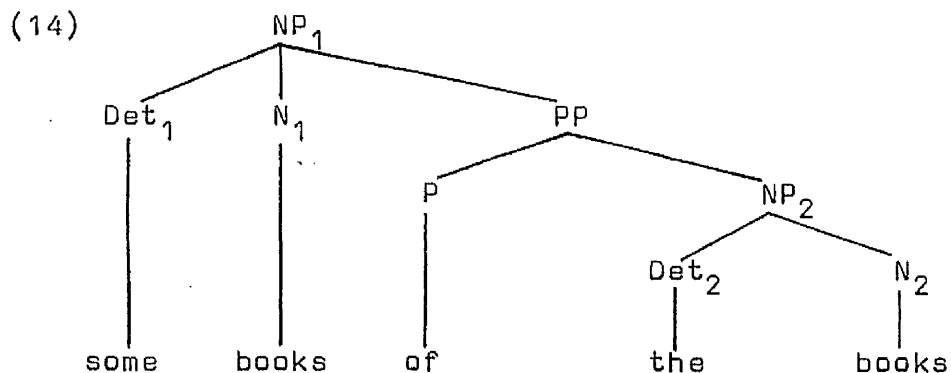
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1. For details of criticisms against such analyses as illustrated in (9) above, see Stockwell et al (1973), pp. 112-114; and also Jackendoff (1968), p. 430.

2. See Jackendoff (1968), pp. 430-432.

such as (13) below is derived from the partitive construction (14).

(13) some of the books



A transformational rule is then required to delete  $N_1$ , if it is identical to  $N_2$ .

The most serious problem with Dean's model, as discussed in Jackendoff (1968, p. 431), is the status of NPs with respect to definiteness/indefiniteness. Consider that if  $Det_2$ , for instance, is given the status 'indefinite', the whole NP could then also be indefinite. Thus, one gets ungrammatical phrases such as :

(15)\* some books of books

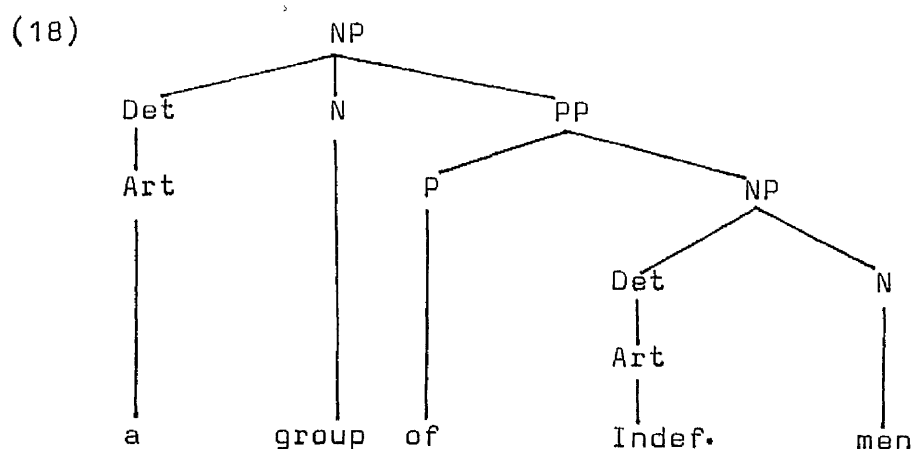
Similarly, with some quantifiers such as many,  $Det_1$  and then the whole NP (that is,  $NP_1$ ) could be made indefinite. Thus, the NP of sentences like (16) must be wrongly considered indefinite.

(16) many of the books are sold out.

Quantifiers in English are also treated differently by Jackendoff (1968). In his analysis, he considers

quantifiers as items preceding the complement phrase 'of NP', and to consist of three groups, each with a particular syntactic behaviour.<sup>1</sup> Group I are those such as : a group, a herd, and a number which can occur independently as NPs. Group II consists of quantifiers such as all, some, and each which can be used as prearticle determiners. Finally, group III comprises those quantifiers such as a few, many, and numerals one, two, etc. which occur as postarticles. Jackendoff (1968), then, suggests three syntactic structures, one for each group. Among them, the first and third structures seem similar to each other. To clarify the matter, two phrases such as (17) and (19) below with quantifiers a group and two (quantifiers of types I and III, respectively) are analysed as illustrated in the following.

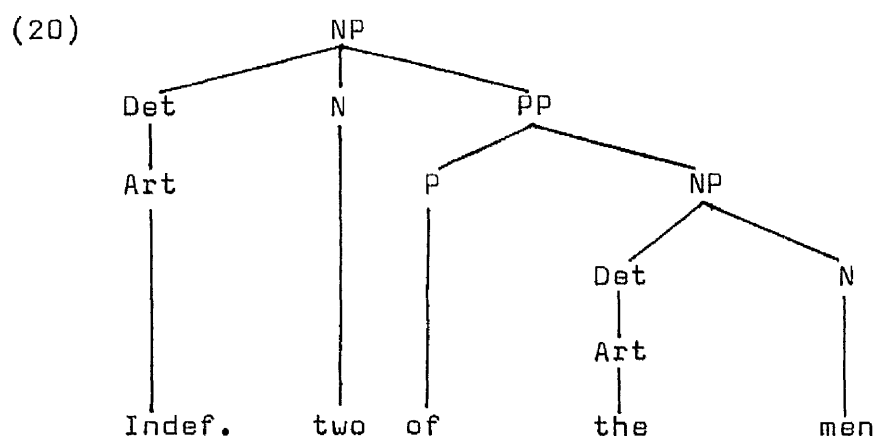
(17) a group of men



(19) some of the men

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1. Jackendoff (1968), pp. 422-428.



The preposition of in structure schemes (20) can then be transformationally deleted to account for cases like (21) below with the quantifier many (of group III).

(21) many men

Among major problems with this analysis is the one argued by Hogg (1977) that it does not account for the occurrence of quantifiers in overt predicate position.

"In the case of quantifiers appearing in overt predicate position, Jackendoff's analysis is inadequate in that he completely fails to provide any structure for them."<sup>1</sup>

Finally, the most controversial analysis of English quantifiers is that presented in Lakoff (1970a) and Carden (1973). According to this analysis, which is usually referred to in the literature as the 'Lakoff-Carden Hypothesis', the quantifiers of English, depending upon their status in the surface structure, are in underlying structure predicates of higher or lower sentences. The underlying

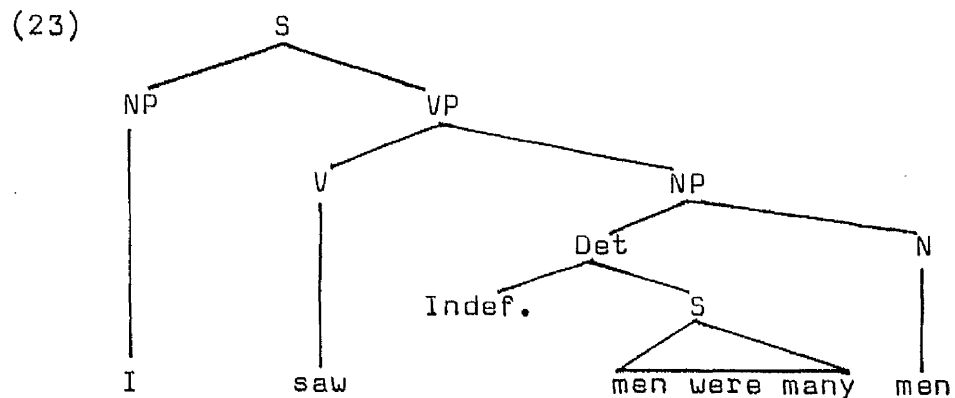
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1. Hogg (1977), p. 37.

sentence containing a quantifier as its predicate must, for Carden, be higher than the quantified noun. A transformational rule called 'Quantifier-Lowering' will then be required to delete a number of nodes and "... move the quantifier from this higher S into its surface structure position as a constituent of the NP it modifies."<sup>1</sup> For Lakoff, this underlying sentence can be either above or below the quantified noun, with the same surface structure result but different semantic senses.<sup>2</sup> Thus, for a sentence such as :

(22) I saw many men.

Lakoff suggests two different deep structures,<sup>3</sup> as demonstrated by the following schemas.



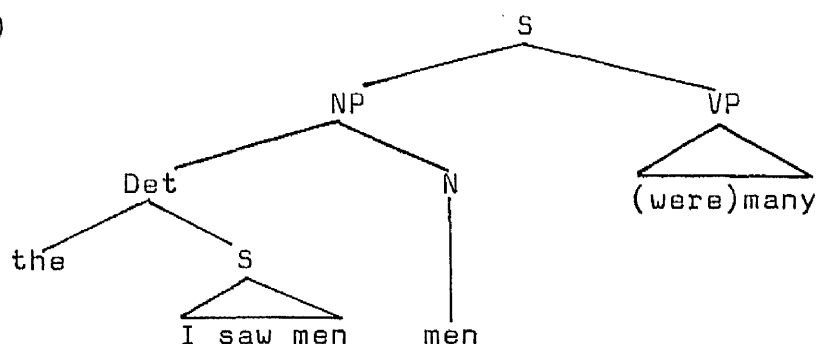

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1. Carden (1973), p. 14.

2. Jackendoff (1968), pp. 433-435.

3. See Stockwell et al (1973), p. 101.

(24)



Sentences such as (22) are, then, said to be ambiguous between two interpretations concerning men and many, as represented by the two structure schemas (23) and (24) above, respectively. In Lakoff's (1970a) own words, such ambiguous cases are quite expected :

"Since noun phrase quantifiers may be derived either from "higher" sentences containing quantifier predicates or from embedded relative clauses of the same sort, one would expect to find cases of ambiguity -where a single noun phrase quantifier can be derived from two such underlying sources."<sup>1</sup>

The motivation for the Lakoff-Carden hypothesis is, as Jackendoff (1968, p. 433) points out, "fairly complex". However, the major arguments in favour of such a hypothesis can be summarized as follows.

(i) 'Archaic' constructions. One of the Lakoff's (1970a, p. 175) arguments<sup>2</sup> for his proposal is that in 'archaic' English there are constructions like :

(25) Many were the men that perished.<sup>3</sup>

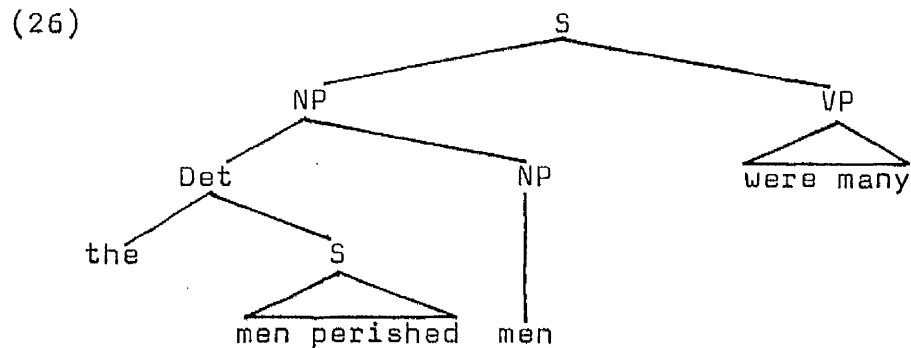
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1. Lakoff (1970a), p. 177.

2. See also Lakoff (1970b), pp. 395-399.

3. The example is taken from Jackendoff (1968), p. 433.

Such sentences can easily be analysed as from a deep structure like (26) below, with many as the predicate of a higher sentence.



Such a proposal, although it provides a reasonably plausible analysis of 'archaic' constructions of English with such quantifiers as many, few, and several, can not, as Stockwell et al (1973) claim, account for "... a number of quantifiers which cannot even "archaically" occur in predication position."<sup>1</sup> Compare, for instance, constructions in (27) and (28) below.<sup>2</sup>

(27a) the many arguments

(27b) the five arguments

(27c) the few arguments

(28a)\* the some arguments

(28b)\* the every arguments

(28c)\* the all arguments

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1. Stockwell et al (1973), p. 105.

2. Examples in (27) and (28) are adopted from Stockwell et al (1973), p. 105.

(ii) Equi-NP Deletion. Another argument in favour of the Lakoff-Carden hypothesis is based on the rule of 'Equi-NP Deletion'.<sup>1</sup> In standard transformational grammars, the conventional Equi-NP Deletion transformation is usually used to delete NPs on their identity and coreferentiality with their preceding NPs of the same structure.<sup>2</sup> Thus, taking such a deletion rule into account, sentences such as (30) below can be argued to have come from deep structures similar to (29), where both NPs, all optimists, are co-referential.

(29) All optimists expect all optimists to be President.

(30) All optimists expect to be President.

But, since the two sentences (29) and (30) are not paraphrases of one another, it is claimed that they must have different syntactic sources. This particular problem with the Equi-NP Deletion transformation could be resolved under the Lakoff-Carden hypothesis. Carden (1973) argues that the difference between two sentences such as (29) and (30) above is due to the presence of a different number of higher sentences. If the transformational rule Equi-NP Deletion is ordered before the 'Quantifier-Lowering' rule, which incorporates the quantifier from the higher structure into the NP it quantifies in the surface structure, there

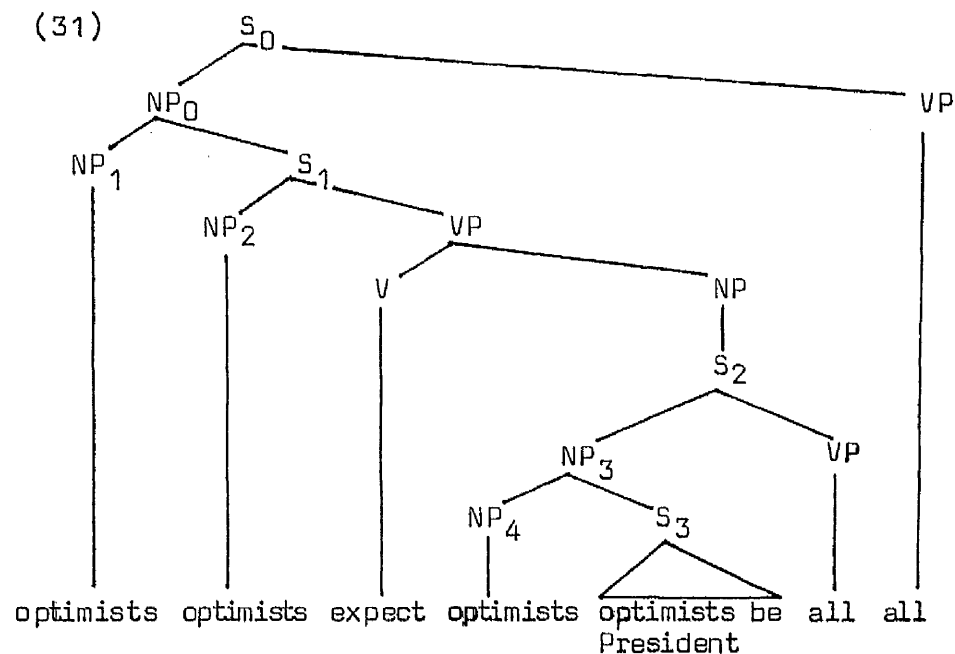
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1. See Carden (1973).

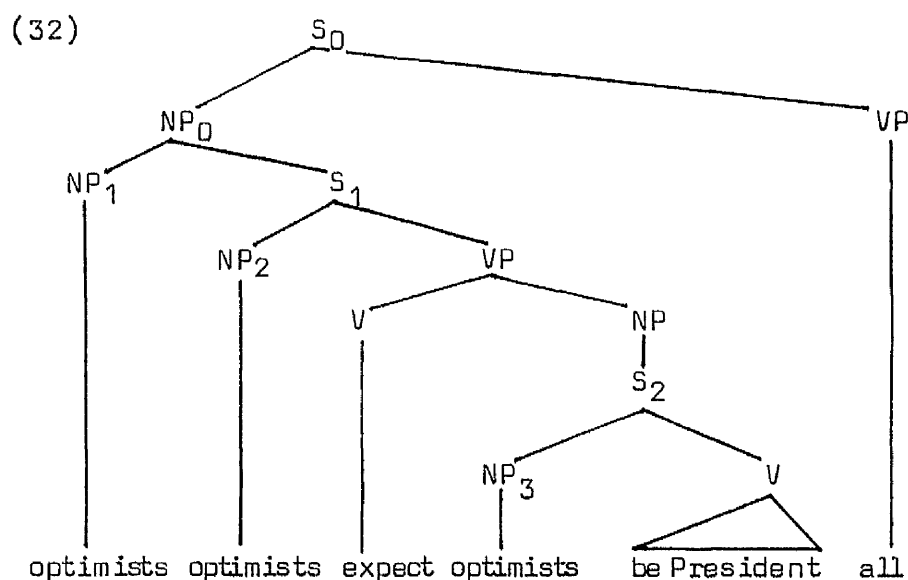
2. See, for instance, Huddleston (1976), pp. 111-126.



will then be no problem with sentences such as the ones above. Thus, sentence (29), for instance, has the following deep structure, in which  $NP_2$  (that is, optimists) is not equal to  $NP_3$  (that is, all optimists) and, hence, Equi-NP Deletion is not applicable.



Now, to clarify syntactic differences between pairs of sentences such as (29) and (30) above, compare the deep structure illustrated by the schema (31) for the sentence (29) with the schema (32) below, the deep structure of the sentence (30), in which  $NP_2$  is identical to  $NP_3$ . The Equi-NP Deletion rule, then, can be applied to (32) to derive structures like (30) above.



There are, however, a number of serious criticisms to be levelled against Lakoff-Carden's arguments based on the rule of Equi-NP Deletion as one of the motivations of their hypothesis.<sup>1</sup> One of these, which is made by Jackendoff (1968, p. 434),<sup>2</sup> says that the same difference between the two sentences (29) and (30) exists between pairs of sentences such as (33) and (34) below with indefinite plural nouns.

(33) Senators from New England admire Senators from New England.

(34) Senators from New England admire themselves.

Jackendoff then argues that the problem of Equi-NP Deletion with pairs of sentences such as (29) and (30) above can not be used to claim that quantifiers must be analysed

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1. See Stockwell et al (1973), p. 111.

2. See also Jackendoff (1971), pp. 286-287.

as predicates of higher sentences. Following this, he also adds that :

"The fact that these phenomena appear in ordinary plurals show that the problem has nothing to do with quantifiers, but is in fact a more general problem of reference of sets."<sup>1</sup>

Supporting Jackendoff's arguments against the Lakoff-Carden hypothesis, Hogg (1977) also attempts to relate the semantic differences between pairs of sentences such as (29) and (30) above to the ambiguity of sentences like :

(35) The masochists whipped themselves.

with two interpretations : either each masochist whipped only himself, or each masochist whipped himself and all other masochists. On the basis of such ambiguities, and referring to sentences such as (29) and (30) above with quantifiers, he then disapproves the rule of Equi-NP Deletion as evidence for the Lakoff-Carden hypothesis, and concludes that :

"... we are clearly obliged to conclude that the evidence of Equi-NP Deletion in no way gives support to the hypothesis that quantifiers should be derived from higher predicates. Moreover, we can state with confidence that even if such a hypothesis were independently justified, there is very little evidence that this would help towards a solution of the Equi-NP problem. For if it were so then we would be committed to the claim that plural NPs have higher quantifiers ..."<sup>2</sup>

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1. Jackendoff (1968), p. 434.

2. Hogg (1977), p. 27.

(iii) Negation and Quantifiers. One of Carden's (1973, pp. 16-22) arguments in favour of his claim that quantifiers are deep structure higher predicates is based on the "Not-Transportation" rule. The Not-Transportation rule (NT) has the function of moving a NEG element from embedded sentences to verbs of higher sentences with  $[+NT]$  feature, and vice versa. Thus, for instance, the rule moves the NEG element from the embedded sentence 'he has not gone' in (36) below to the verb think of the higher sentence in (37). Verbs such as think, expect, believe, etc. are marked as with  $[+NT]$  feature.

(36) I think he has not gone.

(37) I do not think he has gone.

Now, having the rule Not-Transportation in mind, notice that quantifiers, too, can be negated independently of the main verb of their sentences. For instance, consider the two sentences (38) and (39) below.

(38) All the boys don't run.

(39) Not all the boys run.

Carden (1973) argues on the basis of the similar behaviour of 'Not-Transportation' with verbs of higher sentences (such as think in (36) and (37)) and with quantifiers such as all in (38) and (39) that quantifiers are deep structure predicates.

Although the argument of 'Not-Transportation' with

respect to quantifiers and higher verbs is a significant piece of evidence in support of the Lakoff-Carden hypothesis, there are criticisms which suggest that 'Not-Transportation' is not a rule at all.<sup>1</sup> Hogg (1977), for instance, when he discusses the inadequacies of the Lakoff-Carden hypothesis, does not consider the argument based on 'Not-Transportation' to be particularly significant for a variety of reasons, one of which is that "... it is unclear whether or not Negative Transportation is a meaning preserving rule ..."<sup>2</sup> It is, of course, not the case for the Extended Standard Theory whether a transformational rule, such as, for instance, 'Not-Transportation', is meaning-preserving or not, but it surely matters for the Lakoff-Carden hypothesis, since it is made on the basis of the principles of Generative Semantics.

Stockwell et al (1973) point out that although the conditions for the 'Not-Transportation' rule, namely that the NEG element must be moved from embedded sentences to their immediate dominating sentences, appears to be crucial for the Lakoff-Carden hypothesis, "... but there is much stronger evidence against such a claim than for it."<sup>3</sup> Some of the examples given (in Stockwell et al (1973, p. 112)) to support his view are presented below.

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1. See Stockwell et al (1973), p. 111. ; and also Jackendoff (1971), pp. 282-296.
  2. Hogg (1977), p. 30.
  3. Stockwell et al (1973), p. 112.

(40a) The teacher does not expect three of the girls to pass the exam.

(40b) The teacher does not expect us to answer ten of the questions right.

Sentences (40a) and (40b) are said to be ambiguous, at least for some dialects. Such ambiguities are due to interpreting 'three of the girls' in (40a) as 'three particular girls' or 'even three of the girls', and 'ten of the questions' in (40b) as 'ten particular questions' or 'even ten of the questions'. To account for these ambiguities, the 'Not-transportation' rule has to operate (that is, to move the NEG element) over either one or two sentences, to permit interpretations resulting from not expect and not three of the girls in (40a), and not expect and not ten of the questions in (40b). This, on the other hand, does not meet the conditions for the rule (NT) to function, as mentioned above. Furthermore, look at the following two sentences.

(41a) John does not expect any of the boys to arrive on time.

(41b) John does not expect some of the boys to arrive on time.

Sentences such as these are unambiguous, but for a sentence like (41b), Stockwell et al (1973) argue that, the 'Not-Transportation' rule would have to operate up two levels to move the NEG element from the verb arrive to some and finally to expect. This is again incompatible with the

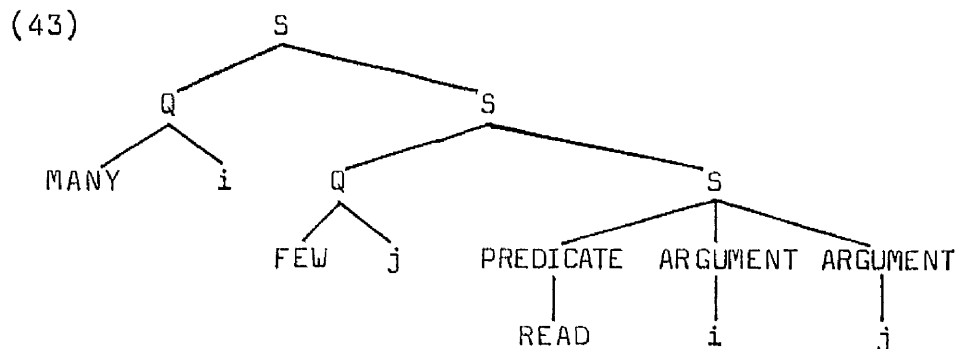
conditions usually assigned for the rule (NT), discussed above.

In conclusion, the analysis of English quantifiers as underlying predicates, aside from its certain advantages, leads to a considerable number of serious problems and counter-arguments.

#### 4.1.4 Quantifiers in Logic

One of the issues of formal logic which has also been employed by some linguists, especially Generative Semanticists (such as Lakoff (1970b) and Carden (1973)), is the treatment of quantifiers. These linguists have also made attempts to present linguistic arguments based upon the notation of symbolic logic. Lakoff (1970b, p. 239), for instance, presents (43) below as the alternative to the Standard Theory for the analysis of the syntactic structure of sentences such as (42).

(42) Many men read few books.



How the notation of symbolic logic can sufficiently reflect the underlying semantic structure of natural

languages and how, in general, linguistics and logic interact<sup>1</sup> is a controversial issue. Some linguists believing that "Linguistics is a science, and sciences are by definition logical systems."<sup>2</sup> have tried to provide a translation relationship between logical elements and items of natural language and, for instance, claim that and, all, and not, are clearly "English translations of logical elements."<sup>3</sup> Others, however, including Hogg (1977) separate linguistics from logic on the basis of the fact that :

"... linguistics is an empirical science, it depends upon the construction of a rule device which generates actual sentences of an actual natural language. On the other hand, philosophy, and hence logic, is a theoretical science."<sup>4</sup>

Following this view on discussions presenting linguistic analyses in the notation of symbolic logic, he concludes that :

"... the empirical constraints on grammars and the restricted aim of logic must mean that there will be many differences between the representation of the linguist and those of philosopher."<sup>5</sup>

In spite of such controversies, there are two types of quantifier in logic which are often used in linguistics. These are : the Universal Quantifier and the Existential

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1. For a detailed view of semantic representations in both linguistics and logic, see Kempson (1977), pp. 185-191.
  2. Bolinger (1968), p. 237.
  3. Carden (1973), p. 3.
  4. Hogg (1977), p. 33.
  5. Ibid, p. 34.



Quantifier, usually represented by the symbol  $\forall$  and  $\exists$ , respectively. The meaning of these quantifiers in logic can roughly be expressed as follows.

(44)  $\forall$  : 'for everyone / everything'<sup>1</sup>

(45)  $\exists$  : 'there is someone / something'

The meaning of these quantifiers in a natural language such as English are something like all and every for the Universal Quantifier and a(n) and some for Existential Quantifier. For instance, two sentences such as (46) and (47) can be formulated in logic as (48) and (49) below, respectively.

(46) All girls are beautiful.

(47) Some girls are beautiful.

(48)  $\forall x (G(x) \longrightarrow B(x))$

(49)  $\exists x (G(x) \ \& \ B(x))$

The device x in the above formulas is called in logic as 'individual variable' and stands for any (non-specific) individual. The two formulas (48) and (49) can, thus, be read in logic as (50) and (51) below respectively.<sup>2</sup>

(50) for any x, if x is a girl then x is beautiful.

(51) there is at least one x, such that x is a girl and is beautiful.

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1. See Allwood et al (1977), pp. 61-66; and also Hodges (1977), pp. 197, 201.

2. See, for instance, Lemmon (1965), pp. 92-116.

One of the benefits of using symbolic logic in the semantic representation is that the scope interpretation of quantifiers in sentences, as shown for English for instance, is determined by their surface structure position (that is, leftmost), and this is equivalent to the position of the corresponding quantifiers in the formula constructed by the logical representation of the meaning of those sentences. To clarify this relationship between the scope of quantifiers in sentences of natural language and that of logical formula of the meanings of those sentences, consider, first, the scope interpretation of the quantifiers every and two in the following pairs of sentences.

(52a) Everyone in this room speaks two languages.

(52b) Two languages are spoken by everyone in this room.

Sentences like (52a) and (52b) each have a preferred reading associated with the wide scope interpretation of everyone and two languages, respectively. However, these sentences, in particular the passivized (52b), are usually thought of (by Chomsky (1965), for instance) as ambiguous sentences with two readings. For instance, the sentence in (52b) is said to be ambiguous between the following interpretations.

(53) there are two specific languages (such as, for instance, English and Persian) which are spoken by everyone in this room.

- (54) Any two languages (among English, Persian, French, etc.) are spoken by everyone in this room.

Furthermore, the preferred readings of pairs of sentences such as (52a) and (52b) above appear to be normally different from each other. Such ambiguities as (53) and (54) for the passive sentence (52b), and, more important, differences in the preferred readings of active/passive sentences (with quantifiers) like (52a) and (52b) seem problematic for the Standard Theory (Chomsky (1965)), since (1) ambiguous sentences are assumed to have different deep structures, and (2) transformational rules are meaning-preserving.

By the weight of such arguments, generative semanticists, as the alternative to the transformational machinery of the Standard Theory, argue for 'deeper' deep structures associated with logical representation of the meaning of sentences. In line with this, logical representations of sentences, and, in particular, of quantifiers, are very useful in disambiguating sentences such as (52a) and (52b) above, for the wide scope of interpretation of quantifiers like every can explicitly be demonstrated by the Universal Quantifier  $\forall$ , and two by the Existential Quantifier  $\exists$ .<sup>1</sup>

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1. See Jackendoff (1972), pp. 281-282, for another view on ambiguous interpretation of sentences which can be disambiguated by using the notation of symbolic logic.

## 4.2 MORPHOLOGICAL CLASSIFICATION

Quantifiers in Persian can be divided into three morphological subclasses: 'simple', 'complex', and 'compound'. Each of these major subclasses may also be further divided into smaller groups. Such divisions of the morphological structure of Persian quantifiers will be dealt with in this study as follows.

### 4.2.1 Simple Quantifiers

Simple quantifiers are those whose morphological structure consists of a single free morpheme. Examples of these quantifiers are hame 'all', ba?zi 'some', xeili 'many', and čand 'some, few'.<sup>1</sup> The subclass of simple quantifiers also includes morphologically simple numerals (or, as discussed in 4.1, [+Numeral] quantifiers) like yek 'one', do 'two', etc.

Simple quantifiers like ba?zi 'some' and xeili 'many' are usually treated in traditional grammars (such as Kian (1978, p. 46)) as complex structures formed from ba?z and xeil, for instance, and the suffix -i. In the synchronic account of this study, since forms like ba?z and xeil are no longer used independently in present-day Persian,

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1. The quantifier čand 'some' is almost equivalent to and of literary Persian indicating a number between three and nine. See also Gharib et al (1950b), p. 14.

quantifiers such as ba?zi 'some' and xeili 'many' are treated as morphologically simple forms which can not further be divided into smaller morphemic units.

The position of the primary stress of these quantifiers varies for each quantifier used in isolation. For instance, the primary stress of the quantifier hame 'all' is on its last syllable, whereas of ba?zi 'some' is on the first syllable, as demonstrated below.

(55) ha'me                'all'

(56) 'ba?zi             'some'

As discussed in 4.1.1, quantifiers (including morphologically simple forms) are of two types, distinguished by [ $\pm$ Singular] features, according to their function as modifiers of [ $\pm$ Singular] NPs or [ $\pm$ Singular] NPs. Simple quantifiers of [ $\pm$ Singular] type can also be used to form morphological compound forms (discussed in 4.2.3).

#### 4.2.2 Complex Quantifiers

Complex quantifiers are those formed morphologically from nouns or adjectives and the suffix -i. Examples of such structures are goruhi 'a group' from the noun goruh 'group', and besiyāri 'many' from the adjective besiyār 'much', and the suffix -i.

The primary stress of these quantifiers occurs on the syllable preceding the suffix -i. Thus, the two mentioned quantifiers must be pronounced as :

(57) go'ruhi 'a group'

(58) bes'yāri 'many'

Nouns used in the formation of these complex quantifiers (such as goruhi 'a group') are usually of the sort group-words like jam?iyat 'crowd, group (of people)', daste 'bunch, group', galle 'herd', etc. For instance, complex quantifiers formed from these nouns are jam?iyati 'a group (of people)', daste?i 'a bunch, a group', and galle?i 'a herd'. As the quantifiers daste?i and galle?i demonstrate, the suffix -i used in the formation of complex quantifiers has /?i/ as its allomorph when added to nouns ending with a vowel.

#### 4.2.3 Compound Quantifiers

Compound quantifiers are those whose morphological structure comprises two free morphemes. These quantifiers are of two types : (i) those formed from the simple quantifier har 'every, each', such as har-yek 'each' and har-kodum 'each', and (ii) those formed from hiċ 'no', such as hiċ-yek 'none'.

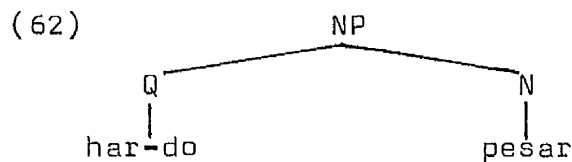
Morphologically compound quantifiers have (like simple quantifiers, discussed in 4.2.1) one primary stress which normally occurs on the last syllable of the quantifiers when used in isolation. For instance, quantifiers har-yek 'each' and hiċ-kodum 'none' would, in pronunciation, be :

(59) har'yek 'each'

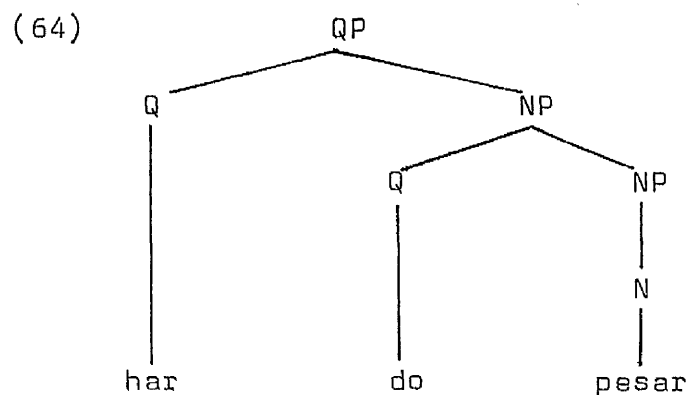
(60) hiċko'dum 'none'

Numerals (or  $\left[ +\text{Numeral} \right]$  quantifiers) used in the formation of morphologically compound quantifiers are restricted to yek 'one', do 'two' and se 'three' for the first type (as in har-yek 'each', har-do 'both' and har-se 'all three'), and only yek 'one' for the second type (as in hiċ-yek 'none'). These compound quantifiers are similar to syntactic phrases formed from morphologically simple quantifiers har 'every, each' and hiċ 'none', and numerals. To clarify such syntactic phrases and their similarities with morphologically compound quantifiers, consider the following examples and their syntactic structures presented under each case .

- (61) har-do pesar                      'both boys'  
       (both) (boy)



- (63) 'har 'do pesar                      'each/all of the boys'  
       (each)(two)(boy)



The phrases above contain the morphologically compound quantifier har-do 'both' in (61), and two quantifiers har 'each' and do 'two' in (63), as illustrated by their syntactic structures (62) and (64), respectively.

Morphologically compound quantifiers such as har-yek 'each', har-do 'both', har-se 'all three', (of the first type), and hiċ-yek 'none' (of the second type) are different in many ways from the corresponding syntactic structures formed from har 'each' and numerals yek 'one', do 'two', and se 'three', and also hiċ 'none' and the numeral yek 'one'. These differences will be discussed below. For the sake of argument, these two types of structure will be distinguished here as (morphological) compound quantifiers and (syntactic) quantifier phrases. Such a distinction can further be justified on the following grounds.

The first distinction between compound quantifiers and the corresponding quantifier phrases is in their primary stress. Unlike compound quantifiers, quantifier phrases contain two distinct primary stresses on both [ -Numeral ] quantifiers, har 'every' and hiċ 'none', and their following numerals. To show this, the following examples of quantifier phrases are marked with their primary stress.

- (65) 'har 'se pesar  
       (each)(three)(boy)  
                   'each/all of the three boys'

- (66) 'har 'dah nafar  
       (ten)(person)  
                   'each/all of the ten persons'



Morphologically compound quantifiers can be followed by the linking morpheme -e (or -ye), but quantifier phrases can not. This difference is illustrated by examples of both types presented below.

- (67) har-'do -ye pesar-hā 'both of boys'  
(both) (boys)
- (68)\* 'har 'do -ye pesar-hā  
(each)(two)
- (69) har-'se -ye pesar-hā 'all three boys'  
(all-three)
- (70)\* 'har 'se -ye pesar-hā  
(each)(three)
- (71)\* 'har 'dah -e pesar-hā  
(each)(ten)
- (72)\* 'har 'bist -e pesar-hā  
(each)(twenty)

As demonstrated, unlike morphologically compound quantifiers (which are restricted to the numerals yek 'one', do 'two', and se 'three' for the first type, and only yek 'one' for the second type), quantifier phrases can be formed from har 'each, every', for instance, and any other numeral. Thus, while the syntactic quantifier phrases 'har 'dah 'each/all ten' and 'har 'bist 'each/all twenty' of (73) and (75) below are grammatical, their corresponding morphologically compound quantifiers in (74) and (75) respectively are not acceptable, as illustrated below.

- (73) 'har 'dah pesar  
(each)(ten) (boy)  
'each/all of the ten boys'

(74)\* har-'dah pesar

(75) 'har 'bist pesar  
(each) (twenty)  
'each/all of the twenty boys'

(76)\* har-'bist pesar

Morphologically compound quantifiers can, like the simple quantifier hame 'all', also occur after quantified nouns, whereas their corresponding quantifier phrases can not. This difference is demonstrated by examples such as the following :

(77) pesar-hā har-'do (umad-and)  
(boys) (both) (came-they)  
'boys both came'

(78)\* pesar-hā 'har 'do (umad-and)  
(each)(two)

(79) pesar-hā har-'se (umad-and)  
(all-three)  
'boys all-three came'

(80)\* pesar-hā 'har 'se (umad-and)  
(each)(three)

Quantifier phrases such as, for instance, 'har 'do 'each/all two' (in example (78) above), if used to quantify nouns in plural form, must have a noun such as nafar 'person' or tā 'thing, person' copying certain features of their quantified nouns. Thus, corresponding to unacceptable (78) and (80), grammatical structures are :

(81) 'har 'do nafar -e pesar-hā  
(each)(two)(person) (boys)  
'both of the boys'

- (82) 'har 'se tā -ye pesar-hā  
 (each)(three)(person) (boys)  
 'all-three of the boys'

Finally, morphologically compound quantifiers are also different semantically from their corresponding quantifier phrases in that the latter are ambiguous in referring either to individual members of the quantified set (with the given number of members specified by the numerals), or to all members (quantified by the numerals) of the referent set. To clarify such semantic differences between the two types of structures and also the ambiguities in syntactic quantifier phrases, examples are presented below.

- (83) har-'do -ye pesar-hā  
 (both) (boys)  
 'both boys'

- (84) 'har 'do pesar  
 (each)(two)  
 1. 'each of the two boys'  
 2. 'both boys'

- (85) har-'se -ye pesar-hā  
 (all-three)  
 'all-three boys'

- (86) 'har 'se pesar  
 (each)(three)  
 1. 'each of the three boys'  
 2. 'all-three of the boys'

In conclusion, morphological, syntactic, and semantic differences (of the types discussed in this subsection) between morphologically compound quantifiers and their corresponding (syntactic) quantifier phrases support the

morphological analysis made here, that har-do 'both', har-se 'all-three', etc. are each a morphologically compound quantifier, and not syntactic phrases each formed from two quantifiers, [-Numeral] like har 'each' and [+Numeral] like do 'two', se 'three', etc.

#### 4.3 SYNTACTIC STRUCTURE

Quantifiers in Persian exhibit different types of syntactic behaviours. The present section will examine these behaviours and, furthermore, put forward an original analysis which in a simple and plausible way explains the syntactic characteristics of all different types of Persian quantifiers. Following this analysis, it will later be claimed that, on the basis of purely syntactic arguments, the majority of so-called quantifiers function syntactically like nouns. To establish this claim, syntactic characteristics of quantifiers will be argued to provide criteria by which the category quantifier can simply be divided into three groups, two of which will then be accounted for in this study as nouns.

This section consists of two parts (4.3.1 and 4.3.2). The first part is written on possible proposals which can be made about the syntax of quantifiers, and the second part presents the original analysis of this study as a solution to the problems of the previous proposals (made in 4.3.1). Attention is drawn to the fact that discussions presented in this subsection are mostly based on purely syntactic grounds and, except for few cases where the

semantic information conveyed by quantifiers correlates directly with their syntactic behaviour, arguments involving semantic properties and related topics (such as focus, for instance) are left aside. To proceed, some of the syntactic variations within quantifiers are illustrated by the sets of examples given below.

- (87a) hame -ye dustān 'all friends'  
(all) (friends)
- (87b) har-do -ye dustān 'both friends'  
(both)
- (87c)\* xeili -ye dustān  
(many)
- (87d)\* cand -e dustān  
(some)
- (88a)\* hame az dustān
- (88b)\* har-do az dustān
- (88c) xeili az dustān 'many friends'
- (88d)\* cand az dustān
- (89a)\* hame dust  
(friend)
- (89b) har-do dust 'both friends'
- (89c)\* xeili dust
- (89d) cand dust 'some friends'

#### 4.3.1 Possible Proposals

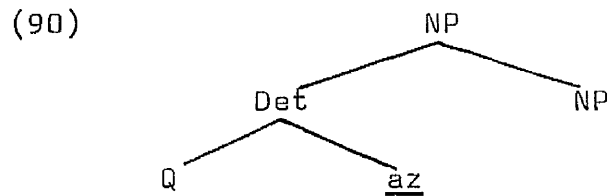
Considering the above examples of NPs with quantifiers, the present subsection is concerned with some possible proposals for the syntactic analysis of quantifiers, and

investigates a number of major problems which may arise from such proposals. These points will be used later to establish a more satisfactory analysis, presented in 4.3.2. For the sake of argumentation, and also to show that the PS framework utilized in this study (see 1.3) can handle the analysis of quantifiers in a simpler way and more satisfactorily than transformations, discussions presented in this subsection are based on the transformational model and the usual notation (of the Extended Standard Theory). The problems and shortcoming of such a transformational model will then be brought out to show the simplicity and plausibility of the non-transformational framework of this study in respect to problems of quantifiers in Persian.

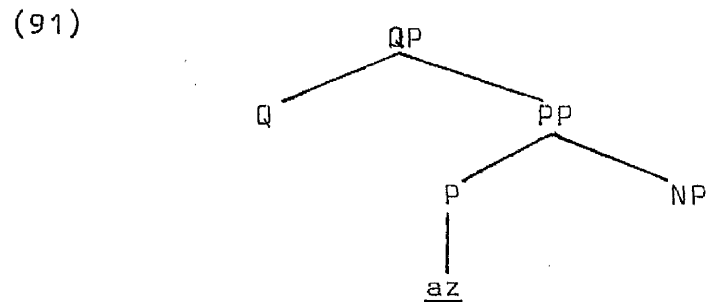
To begin with, it is assumed for the present that there is a general syntactic structure for quantifiers such that with the help of a few transformations it can be used to generate all various types of NPs with quantifiers. Such a structure which reflects the surface structure of NP-constructions with quantifiers (in Persian) would be like (90), which parallels the deep structure proposed by early transformationalists including Chomsky (1965, p. 107) for constructions in English such as 'some of the men'.<sup>1</sup>

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1. Chomsky (1965), p. 107, presents phrase structure rules such as 'NP  $\rightarrow$  ((pre-Article -of) Article)N' for English constructions like 'some of the men'. This analysis for English quantifiers as pre- and  $\rightarrow$



Or, (91) below with Q used as the head.



A transformational rule would then be needed to delete the az element in order to obtain both surface structures exemplified in (88) and (89) above.

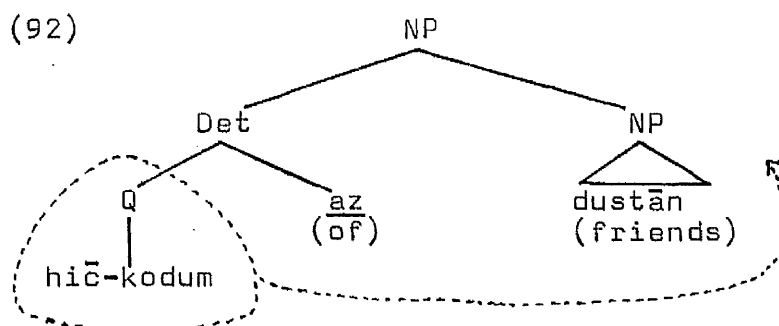
General deep structures demonstrated by the schemas (90) and (91) are simply ad hoc solutions for the analysis of NP-constructions with quantifiers and, in spite of the generalization they seem to capture, it will be argued below that these structures do not correctly account for the syntactic variations of quantifiers, such as, for instance, those mentioned in examples (87-89) above.

Among serious problems with the deep structure in (90), with the quantifier Q and az as constituents of determiner, is the 'extraposition' of some quantifiers such as hič-kodum

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→ (and post-) articles is briefly discussed in 4.1.3.  
 For details of criticisms against such analyses, see Stockwell et al (1973), pp. 112-114.

'none' (or the written form hiċ-kodām 'none'). This movement takes only quantifiers, and not az, and moves them to the right of the complement phrase dominated by the higher NP, as illustrated below.



Examples of such syntactic behaviour of quantifiers are illustrated in pairs of sentences (93) and (94) below.<sup>1</sup>

- (93) hiċ-kodum az dustān tu mehmuni nabud-and  
 (none) (of)(friends)(in)(party)(Neg-were-they)

'none of the friends were in the party'

- (94) az dustān hiċ-kodum tu mehmuni nabud-and

'none of the friends were in the party'

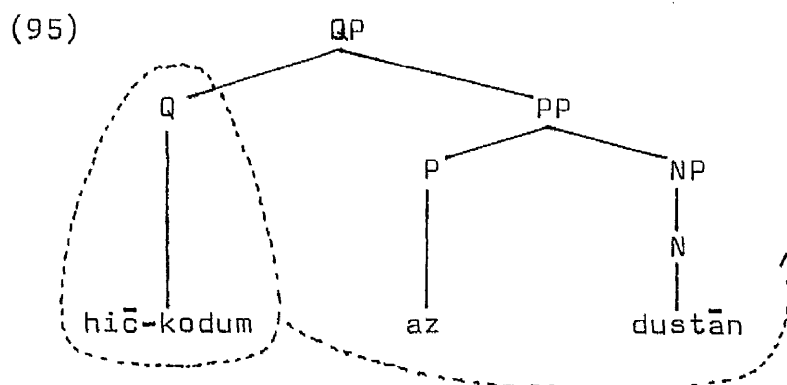
Deep structure required for NPs such as hiċ-kodum az

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1. The difference between pairs of sentences such as (93) and (94) with quantifiers used as prenominal and postnominal elements respectively is that the latter bears focus. That is, sentences with postnominal quantifiers are usually marked as having the main stress and highest pitch of the sentence on their quantified noun. For discussions on the function of focus in interpreting sentences, in English, see Jackendoff (1972), pp. 229-278.



dustān 'none of the friends' in (93) must be formulated in a way which permits describing such movements transformationally. For this purpose, quantifiers must be allowed for in the deep structure as rather independent constituents which can easily be moved rightward over the az and quantified nouns (that is, PPs). Considering such syntactic facts about the extraposition of (some) quantifiers, deep structures like that illustrated by the schema (91), with the quantifier Q separate from complement az-phrases, seem actually more adequate than those like (90), though they have their own shortcomings (as discussed below). Having deep structures like (91), such movements can be accounted for by simple transformations, as demonstrated below.



With such analysis of quantifiers (as illustrated in (91) and also (95) above), there can be additional transformational rules deleting the preposition az 'of' or, by some means, changing it to -e (or -ye) to account for NPs such as the following :

- (96) ba?zi az pesar-hā 'some boys'  
       (some) (of)(boys)
- (97) čand pesar 'few boys'  
       (few) (boy)
- (98) hame -ye pesar-hā 'all boys'  
       (all)

However, analyses illustrated by the structure schema (91), although at first sight seeming adequate for the description of NPs such as (96-98), are improper for the syntax of quantifiers for various reasons to be discussed below.

A distinction is made for English quantifiers by some linguists, including Partee (1970, pp. 157-158), and Lakoff (1970b, p. 396), on grounds of the type of semantic information conveyed by quantifiers and their syntactic distribution. By this distinction, quantifiers in English are considered to be of two semantic types : "absolute", which indicate the total number of members of a class or the 'absolute' size of a set, and "relative", which describe, as Hogg (1977) puts it, "... a certain proportion of a set or the 'relative' size of a set."<sup>1</sup> These two types of quantifier also differ in their syntactic behaviour in relation to the determiner the. How this distinction for English quantifiers can be justified and how adequately it is formulated is not the immediate concern here. Instead, in what follows, a somewhat similar distinction for quantifiers in Persian will be examined to argue that adequate

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1. Hogg (1977), p. 44.

syntactic structure of quantifiers should reflect such semantic variations which also accord with syntactic distribution.

Quantifiers in Persian can be divided into two subcategories : 'simple' and 'partitive', each of which exhibits distinct semantic and syntactic characteristics. The two subcategories simple and partitive almost correspond semantically with the two types 'absolute' and 'relative' proposed for English quantifiers (as mentioned above), respectively. Simple quantifiers are those such as hame 'all' and hič-kodum 'none' which refer to all (or none) of the numbers of the set in question, and partitive quantifiers are those including xeili 'many' and ba?zi 'some' which indicate a proportion or a part of the set. Besides this semantically defined distinction, these two subcategories also differ in their syntactic distribution, as illustrated by the occurrences of the two quantifiers hame 'all' and ba?zi 'some' (of the simple and partitive subcategories respectively) in the following pairs of sentences.

- (99a) hame -ye bačče-hā širini dus-dārand  
(all) (children)(sweets)(like-they)  
'all children like sweets'
- (99b) bačče-hā hame širini dus-dārand  
'children all like sweets'
- (100a) ba?zi az bačče-hā širini dus-dārand  
(some) (of)  
'some children like sweets'

(100b)\* bačče-hā ba?zi širini dus-dārand

(100c)\* bačče-hā ba?zi az širini dus-dārand

(100d)? az bačče-hā ba?zi širini dus-dārand

Among the syntactic differences between the two quantifiers hame 'all' (of the semantic simple type) and ba?zi 'some' (of the semantic partitive type) is the one that the former (as exemplified by the sentence (99a) above) precedes the noun it quantifies with the linking morpheme -ye, but the latter (as in sentence (100a)) has to occur as a sister to prepositional phrases containing az 'of' and quantified nouns. Furthermore, the quantifier hame 'all', but not ba?zi 'some', can be extraposed to the post-nominal position, as illustrated above.

To distinguish the two types of syntactic structures in which the quantifiers hame 'all' and ba?zi 'some' are used (that is, NPs in the sentences (99) and (100), respectively), they will be referred to in the following discussions as syntactically 'simple' and 'partitive' constructions. Now, having two semantically and syntactically defined categories, it is interesting and significant to see that semantically simple quantifiers occur only in simple syntactic constructions, and, similarly, semantically partitive quantifiers occur only in partitive syntactic constructions. In other words, the semantic distinction of quantifiers made here correlates directly with their different syntactic distributions. To clarify the matter

further, consider the distribution of semantically partitive quantifiers xeili 'many' and goruhi 'a group' in the following (syntactically simple and partitive) constructions.

(101a)\* xeili -ye ānhā  
(many) (they)

(101b) xeili az ānhā 'many of them'

(102a)\* goruhi -ye ānhā  
(a group)

(102b) goruhi az ānhā 'a group of them'

Although the semantic and syntactic criteria used above to establish the two distinct categories of quantifier (and their syntactic distribution) seem to be relatively clear-cut, there are some cases where a particular quantifier appears to be problematic. This is true with quantifiers har-kodum 'each, any' and hiċ-kodum 'none' in the spoken language, which can be used in both syntactic constructions defined as simple and partitive.<sup>1</sup> Such behaviours for the quantifier har-kodum 'each, any' can be demonstrated as follows.

(103) har-kodum -e ānhā 'each/any of them'  
(each) (they)

(104) har-kodum az ānhā 'each/any of them'

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1. In the written form of the language, the two quantifiers har-kodum 'each/any' and hiċ-kodum 'none' (in their written forms har-kodām and hiċ-kodām) are normally used only in syntactically partitive, and not simple, constructions.

Cases involving the distribution of quantifiers har-kodum 'each, any' and hiċ-kodum 'none' in both syntactically simple and partitive constructions are due to the semantic ambiguities of these quantifiers. That is, these two quantifiers, particularly in the spoken form of the language, have two meanings associated with the semantically defined categories simple and partitive. Such semantic ambiguities can further be used in the two distinct syntactic constructions (simple and partitive) and, indeed, result in two different surface structures. Thus, for instance, NPs in (103) and (104) above, usually have two interpretations, as presented in (105) and (106) below, respectively.

(105) each of the total number of members of the set to which the quantified noun ānhā 'they' refers to.

(106) each of the total number of members of a certain proportion of the set to which the quantified noun ānhā 'they' refers to.

To clarify the matter further, the two senses conveyed by the quantifier har-kodum 'each, any' in syntactically simple and partitive constructions (103) and (104) above are associated with definiteness and indefiniteness of the whole NPs, respectively. In (103), for instance, the reference of the whole NP is considered (by the native speakers) to be definite, but in (104) it is indefinite such that it usually requires further modification by, for instance, relative clauses. Thus, the head-noun ānhā 'they'

in (103), unlike that in (104), can not normally take restrictive relative clauses, as demonstrated below.

(107)\* har-kodum -e ānhā -?i ke mixā-i  
(each) (they) (that)(want-you)

(108) har-kodum az ānhā -?i ke mixā-i  
'each/any of those which you want'

To avoid further discussion of the semantics of quantifiers, the question of simple and partitive forms of quantifiers like har-kodum 'each, any' in the spoken language will be left here, to claim, instead, that the two distinct syntactic constructions of quantifiers (defined as simple and partitive) can not be satisfactorily accounted for by the analyses illustrated in the structure schemas (90) and (91), for the one simple reason that these analyses admit only one deep structure to underlie all (syntactically and semantically) different types of quantifier. Recall that this syntactic distinction also accords with semantic differences of quantifiers in denoting all or a proportion of members of their referent set.

In addition to such unsatisfactory treatment of simple and partitive quantifiers, if the analysis illustrated by the schema (91) is used to explain all different types of quantifiers, it requires transformations based on the presence or absence of the element az 'of'. Such transformations should be formulated so as to permit three possibilities in surface structure :

- (109) i. where az actually appears in the surface structure.  
 ii. where az changes to -e (or -ye if the quantifier ends with a vowel).  
 iii. where az is deleted between the quantifier and the quantified noun.

Examples for cases (109i) and (109ii) are those such as (104) and (103) above, respectively. Examples of the third type, where az does not appear between the quantifier and the quantified noun, are as follows.

- (110) meqdāri šekar            'some sugar'  
           (some) (sugar)  
 (111) čand dānešju            'few students'  
           (few) (student)  
 (112) dah nafar                'ten persons'  
           (ten) (person)

For a general structure such as that illustrated by the schema (91) to underlie the three surface structure possibilities of quantifiers mentioned in (109), there need to be two distinct transformational rules to : (1) delete the element az in the deep structure, and (2) introduce the morpheme -e, between the quantifier and the quantified noun. Such an analysis is clearly inadequate, since the operation of the two mentioned transformational rules is dependent not upon the structure of NPs containing quantifiers, but on the lexical properties of each individual quantifier.

As a solution to such complications, one might suggest



some conditions for the application of each of the two transformations. These conditions for the transformational rule which deletes the az element (between the quantifier and the quantified noun) can be formulated as follows.

(113) az-Deletion

SD :    X                    Q   az   N                    Y  
                                  NP                                   NP  
                                  1                                   2    3    4                                   5     $\implies$

SC :    1                    2     $\emptyset$     4                    5

Condition : 2 must be and 'some', do 'two', etc.

Conditions such as these permit the application of the deletion transformational rule only if the quantifiers involved are certain specific lexical items. It is thus clear that restricting the application of the transformational rules by conditions as such is not only an ad hoc solution, but further makes the grammar highly sensitive to the particular choice of a lexical item.

Such arguments are sufficient to show that analyses with identical deep structures such as (91) above and, of course, a few transformational rules, can not satisfactorily account for the three surface structure possibilities of quantifiers (mentioned in (109i-iii)). Thus, to present a more plausible analysis, it will be essential to treat the category of quantifier in Persian as consisting of different subcategories, each of which require a different analysis. For this purpose, it is also necessary to investigate precisely the syntactic characteristics of quantifiers, and

establish criteria by which such categories can easily be distinguished. One way to present precise investigation of quantifiers is to employ Hogg's (1977) view that :

"What we need to do is to relate some, or the category of quantifiers, to other grammatical categories, so that we may observe both distinctions and equivalents."<sup>1</sup>

Having this view, and assuming for the present that the most clearly defined categories in any language, and therefore in Persian, are nouns and verbs, the task of investigating quantifiers can then be achieved by relating quantifiers to nouns and verbs in Persian and observing their similarities and differences.

Towards this aim, it will first be assumed here that quantifiers are main verbs. Such a view is best illustrated by the Lakoff-Carden hypothesis (discussed in 4.1.3), that English quantifiers are underlying predicates. Considering criticisms levelled against the motivations of the Lakoff-Carden hypothesis, as briefly discussed in 4.1.3, it is clear that the treatment of Persian quantifiers as verbs raises more arguments against than for it. Furthermore, none of the motivations for the Lakoff-Carden hypothesis can possibly be found in the Persian Language to account for quantifiers as verbs. As an example, consider the rule of 'Not-Transportation' (discussed in 4.1.3) in English sentences (114) and compare these with the corresponding

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1. Hogg (1977), p. 52.

sentences of Persian in (115) to see that this rule, which was a strong evidence in favour of the Lakoff-Carden hypothesis, does not apply to Persian quantifiers.

(114a) Bill thinks that all girls are not pretty.

(114b) Bill thinks that not all girls are pretty.

(114c) Bill does not think that all girls are pretty.

(115a) man fekr-mikonam hame-ye doxtar-hā xošgel  
(I) (think-I) (all) (girls) (pretty)

nistand  
(Neg-are-they)

'I think all girls are not pretty'

(115b)\* man fekr-mikonam na-hame -ye doxtar-hā  
(Neg-all)  
xošgel -and

(115c) man fekr-ne-mikonam hame -ye doxtar-hā  
(Neg-think-I)  
xošgel (bās)-and

'I do not think all girls are pretty'

As shown in example (115b), quantifiers in Persian, unlike English, can not take NEG elements. The only possible construction in which a NEG element in Persian can cooccur with quantifiers is in short answers which must necessarily be preceded by complete questions, as demonstrated below.

(116) Q : fekr-mikoni hame -ye doxtar-hā xošgel  
(think-you) (all) (girls) (pretty)

-and ?  
(are)

'do you think all girls are pretty'

(117a) A<sub>1</sub> : hame (-s̄un) na  
                   (all) (them) (Neg)

'not all (of them)'

(117b) A<sub>2</sub> : na hame (-s̄un)

'not all (of them)'

Constructions such as (117a) and (117b) in which NEG element (ie, na 'not') occurs in post- and prequantifier positions respectively are highly idiosyncratic and ought to be treated as discourse conditioned idioms in that the verb is deleted due to its immediately preceding occurrence. Such constructions are also both semantically and syntactically ambiguous. Thus, construction (117b), for instance, when preceded by the interrogative sentence in (116) can be interpreted as either 'I do not think that all girls are pretty', resulted from the negation of the verb fekr-mikonam 'think-I' of the interrogative sentence, or 'I think that all girls are not pretty', resulting from the occurrence of the NEG element with the verb -and 'are' of (116).

However, given the fact that Persian quantifiers do not show any similarities to verbs (as shown by the unacceptable application of the rule Not-Transportation in (115b)), the next stage to investigate quantifiers will, according to Hogg's view (quoted above), be to assume them as nouns. This assumption is further developed in subsection 4.2.2 presented below. Since the assumption that quantifiers are nouns leads to an original analysis of Persian quantifiers

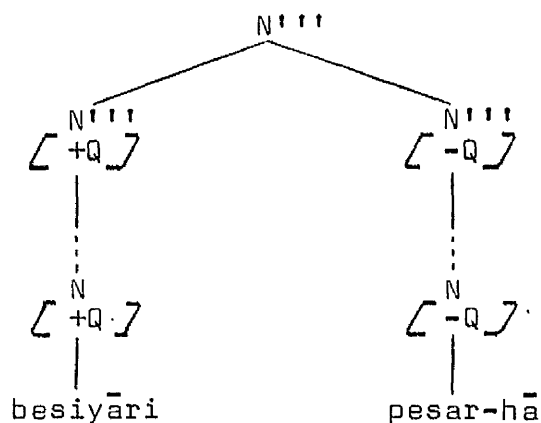
in this study, arguments presented below will be elaborated in accordance with the X-bar Convention notation of the PS-grammar utilized in the thesis (see 1.3).

#### 4.3.2 Quantifiers as Nouns

Following the claim (made above) that Persian quantifiers can not be accounted for as verbs, the present subsection is now concerned with the status of quantifiers as nouns. The first difficulties which arise from treating quantifiers as nouns are in distinguishing the two successive nouns : the quantified noun and the noun used to quantify. One way to account for this problem is to use a lexicalist approach and introduce a feature  $[ \pm \text{Quantifier} ]$  into the subcategorization of nouns. Thus, nouns which are used to quantify other nouns are marked with  $[ +\text{Quantifier} ]$ , and quantified nouns with  $[ -\text{Quantifier} ]$  features. Such features of subcategorization must, according to the HFC principle (introduced in 1.3.3) of the PS-grammar employed in this study, be the same as those categorizing their dominating NPs. Having argued for these, NPs such as (118) below must have their structures as illustrated by the schema in (119), where  $[ +\text{Quantifier} ]$  N is the head of  $[ +\text{Quantifier} ]$  N'', and  $[ -\text{Quantifier} ]$  N, the head of  $[ -\text{Quantifier} ]$  N''.

- (118) besiyāri pesar-hā                      'many boys'  
           (many)                (boys)

(119)



The proposal that quantifiers should be analysed as nouns receives syntactic support from the fact that quantifiers such as hame 'all', besiyāri 'many', and baʔzi 'some' can also be used independently as head-nouns. Examples are given below.

- (120a) (hame -ye) pesar-hā raft-and  
(all) (boys) (went-they)  
'(all) boys went'
- (120b) hame raft-and 'all went'
- (121) ba?zi -hā<sup>1</sup> raft-and 'some went'  
(some)(PL)
- (122) besiyāri raft-and 'many went'  
(many)

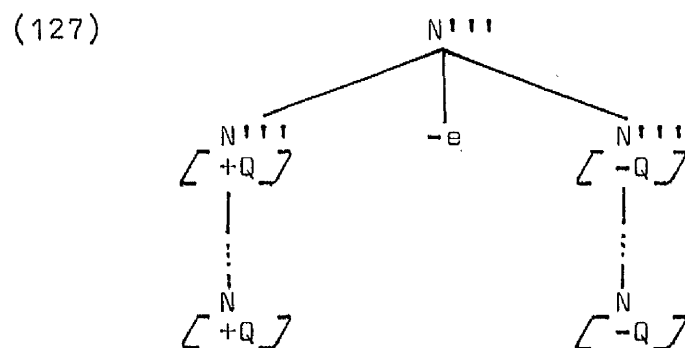
The analysis of quantifiers as nouns is also supported

1. Quantifiers ba?zi 'some' and xeili 'many' when used as head-nouns, can, only in the spoken form of the language, take the plural suffix -hā, exactly like true nouns such as pesar-hā 'boys'. See Lambton (1953), p. 81.

by the occurrence of the linking morpheme -(y)e (discussed in 2.1.2b) to conjoin postnominal modifiers to head-nouns. Thus, assuming quantifiers as  $[+Quantifier]$  nouns, the following NPs demonstrate the fact that quantifiers such as hame 'all' and har-kodum 'each, any' must, indeed, be considered as the head-nouns of their dominating NPs.

- (123) hame -ye ānhā 'all of them'  
(all) (they)
- (124) har-kodum -e ānhā 'each/any of them'  
(each)
- (125) hiċ-kodum -e ānhā 'none of them'  
(none)
- (126) har-do -ye ānhā 'both of them'  
(both)

Considering these facts, a general structure representing NPs such as the above must, in accordance with the assumption made earlier (that quantifiers are  $[+Quantifier]$  nouns), be in the following form.



Having such an analysis as (127), the predictable extraposition of quantifiers such as hame 'all' and har-kodum

'each, any' (as discussed earlier) can now be simply accounted for by metarules (introduced in 1.3.3) relating the one structure to the other. Such metarules can have the following form.

$$(128) \quad N^{+Q} \left[ \begin{array}{c} N^{+Q} \\ \left[ \begin{array}{c} N^{+Q} \\ +Q \end{array} \right] \end{array} \right] -e \left[ \begin{array}{c} N^{+Q} \\ \left[ \begin{array}{c} N^{+Q} \\ -Q \end{array} \right] \end{array} \right] \Rightarrow$$

$$N^{+Q} \left[ \begin{array}{c} N^{+Q} \\ \left[ \begin{array}{c} N^{+Q} \\ -Q \end{array} \right] \end{array} \right] \emptyset \left[ \begin{array}{c} N^{+Q} \\ \left[ \begin{array}{c} N^{+Q} \\ +Q \end{array} \right] \end{array} \right]$$

Surface structure realization of the rule in (128) can be shown by the following constructions in which the occurrences of quantifiers in (129-132) correspond to those in (123-126) above, respectively.

(129) ānhā hame (man -o miśnās-and)  
(I)-DO (know-they)  
'they all (know me)'

(130) ānhā har-kodum (man -o miśnās-and)  
'they each (know me)' (ie,  
each of them knows me)

(131) ānhā hiḥ-kodum (man -o ne-miśnās-and)  
'none of them (knows me)'

(132) ānhā har-do (man -o miśnās-and)  
'they both (know me)'

However, analyses such as (127) with features like  $\left[ \pm \text{Quantifier} \right]$  distinguishing between quantifiers and the quantified nouns, and also the linking morpheme -(y)e as a conjunctive constituent of NPs, can not ultimately



underlie all possible surface structure occurrences of quantifiers (as listed in (109)), for two important reasons. The first of these is that some quantifiers, including numerals, can by no means be accounted for as nouns, simply because they can not be used independently as the head of their NPs. These cases will be dealt with in detail later. The second equally important reason is that some quantifiers, including ba?zi 'some' and xeili 'many', can (as discussed earlier) only be used in partitive constructions, when quantifying [+Definite] nouns. This fact supports the point made earlier that quantifiers can not all be treated as belonging to the same syntactic structure.

To avoid problems such as these, and also bearing in mind the three surface structure possibilities of quantifiers (listed in (109) above), discussions presented below are aimed at setting up distinguishing criteria needed to determine different syntactic (and semantic) groups of quantifiers. For this purpose, distinguishing syntactic criteria are demonstrated under each subcategory of quantifier in the usual way of employing plus/minus symbols. Thus, for instance, given criteria S and P, any quantifier Q must be specified by one of the features [+S, +P], [+S, -P], [-S, -P], or [-S, +P].

The first syntactic criterion to be used here is that some quantifiers, such as hame 'all' and hič-kodum 'none', can be used in extraposition (that is, right of their quantified nouns). This characteristic has been exemplified in, for instance, (99) and is captured by the

metarule in (128). To account for such movement, quantifiers are labelled here as  $\left[ \pm \text{Shift} \right]$  such that quantifiers like hame 'all' and hiċ-kodum 'none' are  $\left[ +\text{Shift} \right]$ , and those like xeili 'many' and baʔzi 'some' (which can not be shifted) are  $\left[ -\text{Shift} \right]$ .

The second distinguishing criterion lies in the syntactic fact that quantifiers such as hame 'all' and hiċ-kodum 'none' can also be used independently as the head of their dominating NPs. Examples of such cases are given in, for instance, (121) and (122) above. This characteristic is represented by the feature  $\left[ \pm \text{Head} \right]$ . Thus, the quantifier hame 'all' and xeili 'many' must therefore be specified as  $\left[ +\text{Shift}, +\text{Head} \right]$  and  $\left[ -\text{Shift}, +\text{Head} \right]$ , respectively.

Finally, the third syntactic criterion is based on the argument presented in 4.3.1 that quantifiers differ syntactically in that they may appear as left-sister of their quantified nouns or cooccur with prepositional phrases containing az 'of' and the quantified nouns (referred to previously as syntactically 'simple' and 'partitive'). For convenience, some of the examples given previously are presented below.

(133a) hame -ye ānhā 'all of them'  
(all) (they)

(134a)\* xeili -ye ānhā  
(many)

(133b)\* hame az ānhā  
(of)

(134b) xeili az ānhā 'many of them'

As demonstrated, hame 'all' is the type of quantifier which must be used as a left-sister of quantified nouns, whereas xeili 'many' is the type which cooccur with prepositional az-phrases in partitive constructions. Such distinctions are represented by the feature [ $\pm$ Partitive] such that quantifiers like hame 'all' are [ $-$ Partitive], and those like xeili 'many' are [ $+$ Partitive] ones.

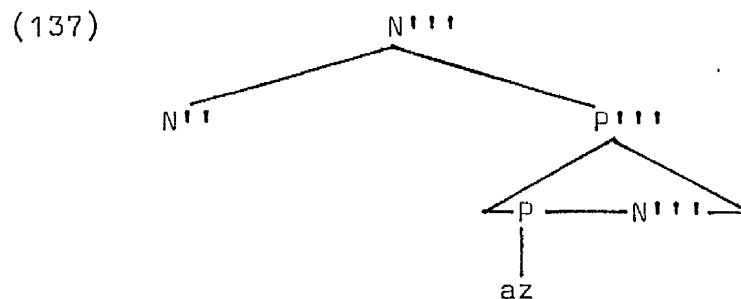
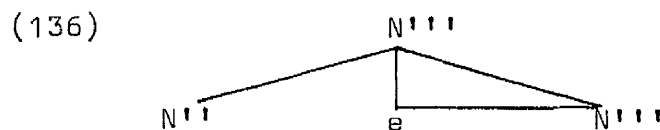
Now, having introduced three binary distinguishing features [ $\pm$ Shift], [ $\pm$ Head], and [ $\pm$ Partitive], three quantifiers such as hame 'all', ba?zi 'some' and kami 'a little', for instance, differ from each other in the following manner.

| (135)                  | [ Shift ] | [ Head ] | [ Partitive ] |
|------------------------|-----------|----------|---------------|
| <u>hame</u> 'all'      | +         | +        | -             |
| <u>ba?zi</u> 'some'    | -         | +        | +             |
| <u>kami</u> 'a little' | -         | -        | -             |

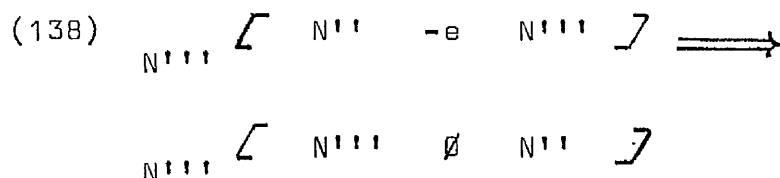
The three quantifiers in (135) each represent a syntactic group of quantifiers, referred to as group I, group II, and group III, respectively. Each of these groups will be discussed further as follows.

Quantifiers of group I such as hame 'all' and those of group II such as ba?zi 'some' share the syntactic feature of [ $+$ Head], that is they can be used as head-nouns. These quantifiers are therefore treated in this analysis as a type of noun. However, these two types of quantifier differ from one another in that those of group I can, unlike

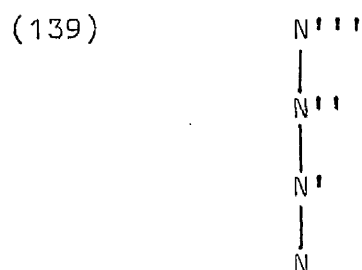
quantifiers of group II, be shifted. Considering the shiftability of these quantifiers and also the fact that quantifiers of group II, unlike those of group I, are used in partitive constructions only (that is, they must precede az-phrases), their syntactic structure proposed here in terms of the X-bar Convention, will look like the following schemas : (136) for quantifiers of group I and (137) for quantifiers of group II.



Proposing (136) as the structure schema of NPs with quantifiers of group I, notice that the metarule given in (128) to predict the postnominal occurrence of quantifiers like hame 'all' now needs to be amended in the following way.



It is also clear that, since dominated N''' in (136) and P''' in (137) function as complements to the head N'', the occurrences of quantifiers of group I and II as independent head-nouns (as in examples (121) and (122) above) can simply be explained as having the following structure.



To further clarify syntactic structures illustrated by (136) for quantifiers of group I, and (137) for quantifiers of group II, more examples of NP-constructions with both types of quantifier are presented below.

- |       |                            |         |                    |                    |
|-------|----------------------------|---------|--------------------|--------------------|
| (140) | <u>hame</u><br>(all)       | -ye     | pesar-hā<br>(boys) | 'all boys'         |
| (141) | <u>?aqlab</u><br>(most)    | -e      | pesar-hā           | 'most boys'        |
| (142) | <u>bištar</u><br>(more)    | -e      | pesar-hā           | 'most boys'        |
| (143) | <u>hič-kodum</u><br>(none) | -e      | pesar-hā           | 'none of the boys' |
| (144) | <u>xeili</u><br>(many)     | az (of) | pesar-hā           | 'many of the boys' |
| (145) | <u>ba?zi</u><br>(some)     | az      | pesar-hā           | 'some of the boys' |

- (146) te?dādi az pesar-hā 'several of the  
(several) boys'
- (147) hiċ-kodum az pesar-hā 'none of the  
(none) boys'

Of the above examples of NP-constructions with quantifiers, structure (136) underlies (140-143), and (137) underlies (144-147).

It is interesting that the metarule given in (138) can predict the movement of quantifiers (of the first group) to the right-most of relative clauses embedded in complement N'''. To clarify such structures, consider pairs of sentences such as those below.

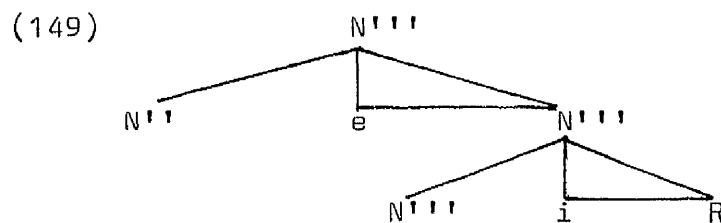
- (148a) hame -ye ānhā [ -?i ke to -ro  
(all) (they) (that)(you) -DO  
mišnāxt-and ] be -t salām  
(knew-you) (to)(you)(greetings)  
resund-and  
(send-they)  
'all those who knew you sent  
(you) greetings'
- (148b) ānhā [ -?i ke to -ro mišnāxt-and ] hame  
be -t salām resund-and  
'those who knew you all sent  
(you) greetings'

In pairs of sentences such as these, the complement N''' of the head N''' (in the structure schema (136) assigned for NPs with quantifiers of group I) also contains restrictive relative clauses (discussed in chapter five). Thus, metarules such as (138) relating extraposed quantifiers

to their usual positions (that is, left-sister of their quantified nouns) can also predict the movement of the quantifiers to the right of relative clauses embedded in complement N'''s. On the basis of such movement, it may then be argued that relative clauses are actually embedded in complement N'''s, and not the dominating N'''s. Supporting such arguments, observe that sentences such as the one below, with extraposed quantifiers and embedded restrictive relative clauses, are not grammatical.

(148c)\* ānhā hame [ -?i ke to -ro miśnāxt-and ]  
 be -t salām resund-and

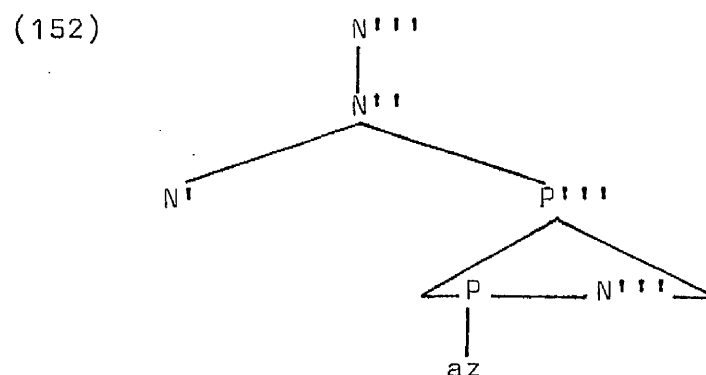
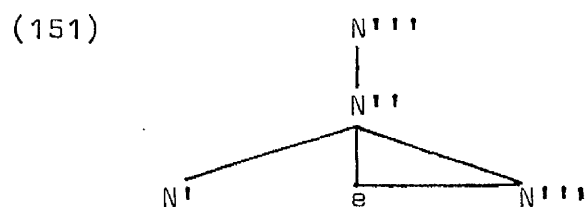
Considering these, and also accepting (136) as the schema illustrating the syntactic structure of NPs with quantifiers of the first type, the NP of the sentence (148a) must, therefore, have the following syntactic structure, where R is used as a sentential node to represent relative clauses, and -i as the linking morpheme appearing in the surface structure as -i (or -?i if preceded by nouns ending with vowel).



There seem to be minor differences in the behaviour of quantifiers of group I (which includes hame 'all'),







To justify the syntactic category of quantifiers of groups I and II, it is necessary to use the fact that these quantifiers function both semantically and syntactically like NPs which are formed from quantifiers of group III (such as ēand 'some', and numerals) and head-nouns, since these NPs are also used to quantify other nouns and have the syntactic features  $[+Head]$  and  $[±Partitive]$ . To show this, consider the parallelism between hame 'all' (a quantifier of group I), ba?zi 'some' (of group II), and the NP se nafar 'three persons', of the following phrases.

(153a) hame -ye ānhā 'all of them'  
(all) (they)

(153b) se nafar -e ānhā 'three of them'  
(three)(person) (they)

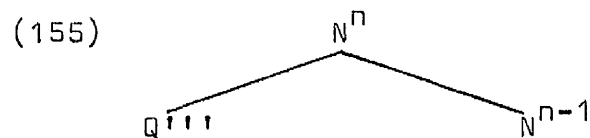
(154a) ba?zi az ānhā 'some of them'  
(some)(of)(they)

(154b) se nafar az ānhā 'three of them'

Due to similarities such as these, quantifiers with  $[+Head]$  syntactic feature (that is, quantifiers of groups I and II) must belong to the same syntactic position (out of the available  $N'''$ ,  $N''$ , and  $N'$ ) as NPs such as se nafar 'three persons'. In other words,  $[+Head]$  quantifiers must be syntactically parallel with NPs such as se nafar 'three persons' in that they are both dominated by the same category. Having said this, it thus becomes clear that, since NPs like se nafar 'three persons' are (as discussed below) derived from  $N''$ , quantifiers of groups I and II must be constituents of  $N''$ , and are therefore dominated by  $N'''$ . If this parallelism is correct, the structures illustrated by the schemas (136) and (137) are, then, plausible analyses for the syntax of NPs with quantifiers of group I and II respectively.

Having discussed the syntax of quantifiers of groups I and II as nouns, the next step is to consider quantifiers of group III, such as čand 'some' and numerals, which are distinguished by the features  $[-Shift]$ ,  $[-Head]$ , and  $[-Partitive]$ . As these quantifiers, unlike those of groups I and II, can not be used independently as head-nouns, they will be treated in this study as true quantifiers (demonstrated by the node Q). The syntactic structure underlying the occurrences of these true quantifiers in NPs is thus proposed to be something like the following, in which the value of "n", in terms of primes, is to be

explored.



To proceed with discussions about true quantifiers (ie, those of group III), some examples are given as follows.

(156) cānd    pesar                    'some boys'  
           (some) (boy)

(157) do    pesar                    'two boys'  
           (two)

(158) kami    sēkar                    'a little sugar'  
           (a little)(sugar)

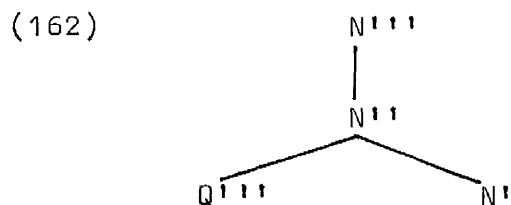
(159) meqdāri    sēkar                    'some sugar'  
           (some)

Since these quantifiers are clearly prenominal modifiers, their precise syntactic status depends upon the determination of the value of "n" in (155). One way of establishing this is to analyse syntactic cooccurrences of these quantifiers with other types of NP-modifier (introduced in 2.1.2) whose status, in respect to their syntactic position (in the three nominal categories N''', N'', and N'), has already been established. For this purpose, examples for the cooccurrences of these quantifiers with demonstratives are presented below.

(160) un    do    pesar                    'those two boys'  
           (that)(two) (boy)

- (161)  $\frac{\text{in}}{(\text{this})} \frac{\bar{\text{cand}}}{(\text{some})} \text{nafar}$  'these few  
(person) persons'

Since demonstratives are argued in 2.3.3 to be pre-nominal  $N'''$ -modifiers, examples such as the above, in which quantifiers (of group III) follow demonstratives, suggest that these quantifiers must be prenominal modifiers of a category lower than  $N'''$ . Such a category could only be  $N''$ , since  $N'$ -modifier position is reserved for (pre-nominal and postnominal) adjectives, as discussed in chapter three. Having assigned the dominating syntactic categories of quantifiers of group III, it is now time to amend (155) and present a plausible syntactic structure for true quantifiers, as follows.



This analysis also provides a simpler explanation for the occurrences of those nouns which copy certain features of head-nouns. To account for these nouns, the quantifier phrase  $Q'''$  has to be expanded so that it dominates, possibly at lower stages, NPs which for semantic reasons may not contain any lexical element. Before discussing such expansion, examples are presented below.

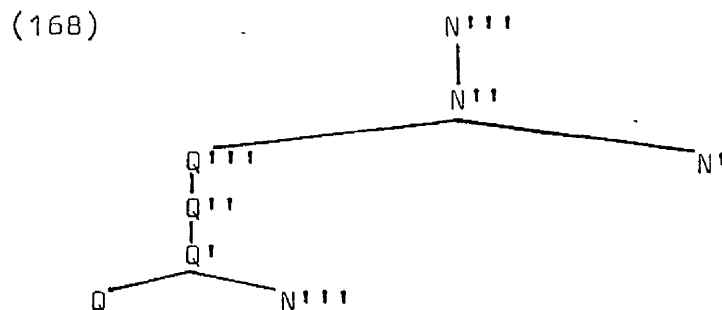
- (163)  $\text{se} \quad \bar{\text{ta}} \quad \text{ketab}$  'three books'  
(three)(thing)(book)

- (164)  $\bar{c}$ and nafar mard 'some men'  
 (some)(person)(man)
- (165) se kilu berenj 'three kilos of rice'  
 (three)(kilo) (rice)
- (166) se metr pārcē 'three metres of  
 (three)(metre)(cloth) cloth'

To begin discussing the syntax of such constructions, it is necessary first to prove that nouns like tā 'thing, person', nafar 'person', kilu 'kilo', and metr 'metre' (in (163-166) above) are constituents of Q''' in an analysis such as illustrated in (162). This task can easily be done by considering examples such as follows.

- (167a) se tā ketāb 'three books'  
 (three) (thing) (book)
- (167b)\* tā ketāb
- (167c) ketāb 'the book'
- (167d) se tā 'three things'

Examples such as (167b) and (167d) clearly show that nouns like tā 'thing, person' can not be a part of head NPs, but are constituents of quantifier phrases. In view of this fact, the structure which admits examples (163-166) can best be demonstrated as :

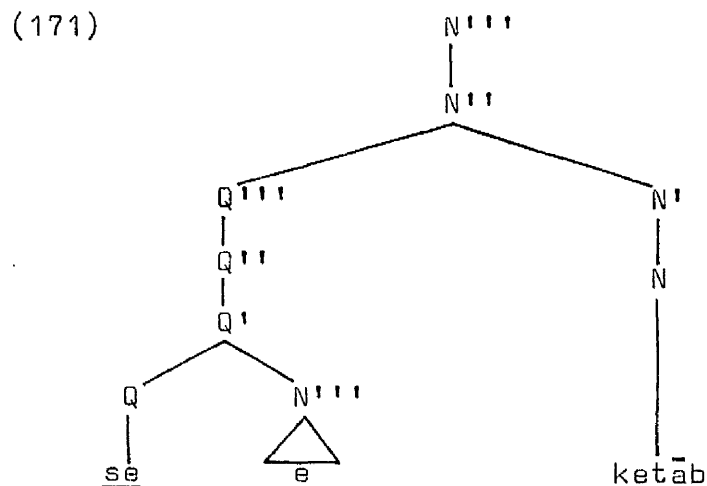


With structure schemas like (168), the  $N'''$  dominated by  $Q'$  has to have the possibility of being empty to generate NPs such as those below, as well as their corresponding NPs in (163) and (164) above.

(169) se ketāb 'three books'

(170) cānd mard 'some men'

Thus, permitting empty nodes in the PS-rules, NPs such as (169) and (170) have the same structures as their corresponding NPs in (163) and (164) respectively, except that their quantifier phrases contain empty NPs, as demonstrated below.



Having empty NPs is not, however, the case for all instances of quantifier phrases, since the following NPs, corresponding to those in (165) and (166), without feature copying nouns are normally not acceptable.

(172)\* se berenj 'three rices'

(173)\* se pārce 'three cloths'

To account for grammatical quantifier phrases such as those in (169) and (170) and ungrammatical ones like those in (172) and (173) syntactically, it is proposed to distinguish the former structures as having a syntactic feature like  $[e]$  such that the feature is further carried over by the dominated  $N'''$  (of the expansion of  $Q'''$ ) and, eventually, leads to empty surface structure. Thus, the expansion of quantifier phrases with surface structure feature copying nouns (such as tā 'thing, person' and nafar 'person') is fundamentally the same as those without them, except that they vary in having  $[e]$ . It is then certain (by convention) that the lack of such a feature (or having  $[-e]$ , in terms of plus/minus symbols) would mean that the category must contain lexical elements. Such generalization for the expansion of quantifier phrase  $Q'$  can easily be demonstrated by using the convention  $\alpha$ , as follows.

$$(174) \quad \begin{array}{c} Q \\ \left[ \begin{array}{c} Q' \\ \alpha e \end{array} \right] \end{array} \quad \left[ \begin{array}{c} N''' \\ \alpha e \end{array} \right]$$

The analysis of quantifier phrases as presented above is also compatible with the semantic intuition of native speakers in interpreting feature copying nouns like tā 'thing, person' and nafar 'person' in the examples above. For instance, pairs of NPs such as (163) and (169) or (164) and (170), each with and without feature copying nouns, which are syntactically from the same sort of structure (as discussed above) also have the same range of

meaning.<sup>1</sup>

Finally, the last point to be mentioned about the syntactic behaviour of quantifiers of group III is that these quantifiers exhibit some variations in their quantified nouns. For instance, some, including numerals, can only be used to quantify singular nouns. Similarly, others, excluding numerals, differ in having their quantified nouns of the types countable or uncountable. To demonstrate such variations among quantifiers of group III, some examples are presented below.

(175a)  $\frac{\bar{\text{cand}}}{(\text{some})}$   $\frac{\text{pesar}}{(\text{boy})}$  'some boys'

(175b)\* cand      pesar-hā  
                      (boys)

(175c)\* cand      sēkar  
                              (sugar)

(176a)\*    meqdāri    pesar  
               (some)      (boy)

1. To interpret such feature copying nouns either with realized or empty surface structures, there have to be some sort of Projection Rules, similar to Jackendoff's (1977b), p. 110, for English partitives, in roughly the following form.

$$(i) \quad [N]''' \longrightarrow \underline{\text{UNIT}} / \partial, [Q \text{ ---}]$$

The projection rule can then interpret N (whether with the feature  $[e]$  or not) as something like "unit(s)" when it is immediately to the right of quantifier phrases.



(176b)\* meqdāri pesar-hā

(176c) meqdāri šekar 'some sugar'

In the examples above, the two quantifiers cānd 'some' and meqdāri 'some' demonstrate variations among quantifiers of group III, that the former quantifies singular countable nouns but the latter uncountables.

#### 4.4 SUMMARY

Quantifiers are words such as hame 'all' and ba?zi 'some' which occur as prenominal modifiers and denote quantities. These modifiers are almost neglected in traditional grammars of Persian. In generative grammars, too, there is, to the best of the writer's knowledge, no work done on Persian quantifiers. However, in English, a considerable number of generative works have been devoted to quantifiers and their syntactic structures. Among them, the most outstanding are the proposals made differently by Chomsky (1965), Dean (1966), Jackendoff (1968), Lakoff (1970a), and Carden (1973). As well as these, quantifiers have also been the subject-matter for logicians to propose the Universal and Existential quantifiers, represented by the symbols  $\forall$  and  $\exists$ , respectively.

Persian quantifiers fall into three morphological subclasses : 'simple', 'complex', and 'compound'. Simple quantifiers are those such as cānd 'some' and xeili 'many' whose structure consists of single free morphemes. Complex

quantifiers are those like goruhi 'a group' and besiyāri formed from free morphemes and the suffix -i. Finally, compound quantifiers are those such as har-yek 'each' and hič-yek 'none' whose morphological structure comprises two free morphemes. These quantifiers are of two types : those formed from har 'each, every', and those from hič 'none'.

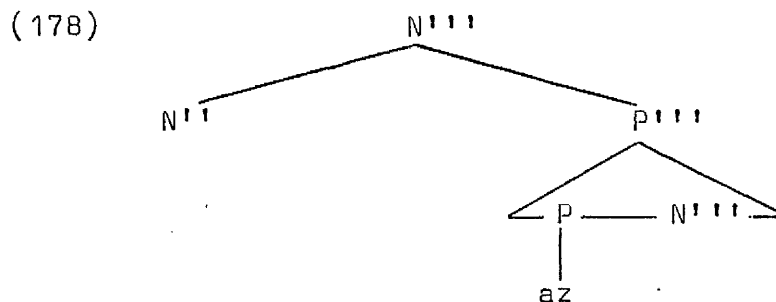
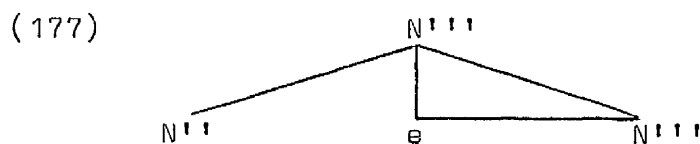
The syntactic behaviour of Persian quantifiers bears fundamental variations which does not permit the postulation of a single general structure underlying all possible instances of NPs with quantifiers. These different syntactic behaviours result in three surface structure constructions in which quantifiers : (1) cooccur with prepositional az-phrases containing az 'of' and quantified nouns, (2) conjoin with quantified nouns by the linking morpheme -e (or -ye if following quantifiers end with a vowel), and (3) occur as left-sister of quantified nouns. To account for these surface structure variations, it is proposed here, as the most simple and plausible analysis, to allow for three different syntactic structures. These syntactic structures can only be explored by distinguishing syntactic features such as  $[ \pm \text{Shift} ]$ ,  $[ \pm \text{Head} ]$ , and  $[ \pm \text{Partitive} ]$ .

Having such distinguishing features, quantifiers are then divided in this study into three syntactic groups, each of which is specified by particular features. To demonstrate such division, the table presented in (135)

is repeated below.

|       |                        |         |        |             |
|-------|------------------------|---------|--------|-------------|
| (135) |                        | [Shift] | [Head] | [Partitive] |
|       | <u>hame</u> 'all'      | +       | +      | -           |
|       | <u>ba?zi</u> 'some'    | -       | +      | +           |
|       | <u>kami</u> 'a little' | -       | -      | -           |

Quantifiers of group I and II (which share the feature [+Head]) can be used independently as the head of their dominating NPs. These quantifiers must, therefore, be treated as nouns. These two types of quantifier are, however, different from each other in that those of group I take linking morphemes to join their following nouns, and those of group II cooccur with prepositional az-phrases. Considering these quantifiers as nouns, syntactic structures required for NPs with quantifiers of groups I and II can simply be demonstrated by the schemas (177) and (178) below, respectively.



Such structures can further be justified by making

the parallelism between quantifiers of groups I and II and NPs containing quantifiers of group III, since they have similar syntactic functions.

Quantifiers of group III, unlike those of groups I and II, do not exhibit nominal characteristics of the kind indicated by the feature  $[+Head]$ , and thus are treated as true quantifiers. The syntactic position of these quantifiers can, by considering their cooccurrences with other already established NP-modifiers, be specified as constituents of  $N'$ . Quantifier phrases (formed from quantifiers of group III) also contain nouns which copy certain features of head-nouns. These feature copying nouns may, for semantic reasons, not appear in the surface structure. Thus, to account for the phonological form of such nouns, a syntactic feature such as  $[e]$  is introduced in quantifier phrases such that it is carried over by NPs dominated by quantifier phrases. Furthermore, by convention, the existence or the lack of such a feature indicates the surface structure status of NPs as empty or with lexical items, respectively. This analysis is compatible with semantic interpretations of such feature copying nouns for native speakers.

## CHAPTER FIVE : RELATIVE CLAUSES

### 5.1 INTRODUCTION

The status of relative clauses is one of the notorious issues to which a relatively large number of generative works are dedicated.<sup>1</sup> Among the controversial points about these, the surface structure differences between restrictive and appositive (non-restrictive) relative clauses (see 5.2.1d) have often provided the basis to argue for different syntactic structures. Thus, for English, while some linguists such as Thompson (1971) argue that :

"... the differences between restrictive and non-restrictive relative sentences are not of the sort that ought to be represented structurally; instead they are differences representing a speaker's decision about how to present to the hearer information present in the underlying representation."<sup>2</sup>

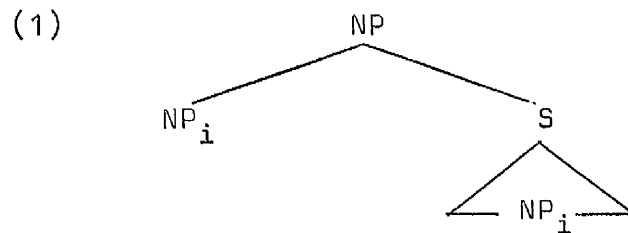
many others, including Jacobs and Rosenbaum (1968, pp. 259-262), Stockwell et al (1973, p. 422), and Jackendoff (1977b, p. 172), provide evidence that the two kinds of relative clauses, restrictive and appositive, must have different syntactic sources. The controversy goes even

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1. For examples of such generative studies on a number of different languages, see Peranteau et al (1972).

2. Thompson (1971), p. 87.

further in relation to the type of syntactic structure to which relative clauses, in particular appositives, belong. There are, at least, three well-distinguished theories put forward for the syntactic structure of restrictives being distinct from appositives in English.<sup>1</sup> Among these, the most widely accepted theory is the one advanced by Ross (1967)<sup>2</sup> that in English, restrictive relative clauses have a syntactic structure as in (1) below,



and appositives derive from coordinate constructions.<sup>3</sup> To clarify the position of relative clauses within such theories further, sentences such as (2b) with restrictive relative clauses and (3b) with appositive relative clauses are assumed to derive from sources more or less like (2a) and (3a) below, respectively.

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1. See, for instance, Smith (1964), pp. 249-250, Stockwell et al (1973), p. 423-441, and Bach (1974), p. 267.
  2. Ross' (1967) doctoral thesis for MIT (Cambridge, Mass.) was, unfortunately, not available to the writer. Instead, excerpts from his thesis are available in Harman (1974), pp. 165-200.
  3. Such a view of the syntax of appositive relative clauses from coordination is also developed in Jacobs and Rosenbaum (1967), p. 259, and Aissen (1972), pp. 187-188.

- (2a) the boy [you met the boy yesterday] is my brother.
- (2b) the boy who(m) you met yesterday is my brother.
- (3a) [the boy is my brother] and [you met the boy yesterday].
- (3b) the boy, who(m) you met yesterday, is my brother.

As the function of this section is not to justify various theories so far suggested for English relativization, details of the above mentioned analysis are not of relevance here. Instead, the application of Ross' (1967) analysis for Persian restrictive relative clauses, as suggested by Vajdi (1976) and Hajati (1977) will be examined in 5.1.3a. Following this, a brief review of Jackendoff's (1977b) analysis of relativization in terms of the X-bar Convention will also be presented (in 5.1.3b) as it has some relevance to the theory of Persian relativization to be developed in this chapter.

The present chapter is, in short, an attempt to clarify for Persian : (1) the internal structure of relative clauses, (2) the syntactic structure of relative clauses in terms of the proposed X-bar theory of this study, and (3) the relevant processes such as pronominalization involved in relativization. Thus, this chapter is divided into three major sections. Section 1 contains a general definition and a brief survey of Persian relative clauses in both traditional and generative grammars.

Following this, section 2 deals with the syntactic structure of relative clauses and proposes an original analysis which in a most plausible and simple way captures their characteristics. Finally, section 3 is devoted to the process of pronominalization and its analysis in terms of the PS-rules proposed in this study. To begin with, a general definition for relative clauses is in order.

#### 5.1.1 Definition

In Persian, relative clauses can be defined simply as sentences which, like adjectives in attributive position (see 3.1.1), occur within NPs as postnominal modifiers to specify the reference of their head-nouns. It is in this function that relative clauses can in many instances be paraphrased by adjectives.<sup>1</sup> Consider, for instance, NPs

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1. On the same sort of argument, Liles (1971), pp. 96-97, claims that adjectives in English are transformationally derived from (restrictive) relative clauses. In this view, the rule required for such transformations, the "noun-modifier transformation" as he calls it, operates to delete WHIZ-words and move adjectives in front of nouns. Having such a transformational analysis, sentences like (i) below can then be assigned as the source of those like (ii) which, in turn, are assumed to be the source of the derivation for sentences such as (iii) with fronted adjective large.

- i. I saw a house which was large.
- ii. \*I saw a house large.
- iii. I saw a large house.

For more arguments about such operations, see also →



such as (4) and (6) below with restrictive relative clauses, and their corresponding constructions with adjectives in (5) and (7), respectively.

(4) un doxtar -i ke emrika?i -ye  
 (that) (girl) (that)(American) (is)  
 'that girl who is American'

(5) un doxtar -e emrika?i  
 'that American girl'

(6) pesar -i ke qadboland -e  
 (boy) (that)(tall) (is)  
 'the boy who is tall'

(7) pesar -e qadboland  
 'the tall boy'

A more satisfactory definition for Persian relative clauses is suggested by Hajati (1977), as quoted below.

"Relative clause in Persian is a "sentence" or a clause, introduced by ke, embedded in the "surface structure" as a modifier of an NP, whether or not it (ie, the clause) contains a "pronominal replacement for a deep structure NP which is in some sense identical with the head NP."<sup>1</sup>

The process of "pronominal replacement" within relative clauses referred to in the above quotation will be discussed in 5.3. For the present, to provide examples

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→ Huddleston (1976), pp. 103-104. This view is also proposed by Vajdi (1976), pp. 197-204, for the analysis of Persian adjectives.

1. Hajati (1977), p. 103.

for the definition given above, consider the following sentences (8b-d) with a source roughly like (8a).

(8a) nevisande-ye ketāb -i  $\int$  ke ketāb -o  
(writer-of) (book)  $\bar{s}$  (that) (book)-DO

xund-i  $\int$  dust -e man -e  
(read-you)  $\bar{s}$  (friend-of)(I)(is)

(8b)\* nevisande -ye ketāb -i ke un -o xund-i  
(that)

dust -e man -e

(8c) nevisande -ye ketāb -i ke  $\emptyset$  xund-i

dust-e man -e

'the writer of the book you  
read is my friend'

(8d) nevisande -ye ketāb -i ke xund-i- $\bar{s}$   
(it)

dust -e man -e

'the writer of the book you  
read is my friend'

The point to be emphasized before beginning the discussion is that relativization can only be possible if the NP of the embedded sentence is identical with (ie, has the same features as) the NP of the matrix sentence. In other words, the very first condition on relativization (of any type) is the identity and coreference of the relativized NP with the head-NP.

Relative clauses are, as Stockwell et al (1973, p. 421) point out, of at least two distinct types :

'Restrictive' and 'Appositive' (or nonrestrictive). A

major semantic difference between these two types is that restrictive relative clauses are usually used to

restrict the reference of their head-nouns, while appositives provide additional information about them. Appositive relative clauses can be omitted without losing track of the reference of their modified nouns. This difference is best stated in Lambton's (1953) words as :

"A distinction is made between 'descriptive' and 'restrictive' relative clauses. The latter type is closely linked to the antecedent in thought, whereas the former, while in a formal sense a dependent clause, does not limit the application of the antecedent, so that it is logically an independent proposition."<sup>1</sup>

Syntactic differences between the two types of relative clause will be dealt with in detail in 5.2.1d. For the present, the following sentences are given to provide enough information for distinguishing restrictive relative clauses from appositives.

- (9) ānhā -?i ke sēnā nemidunest-and  
       (they) (that)(swimming) (Neg-knew-they)  
       tu daryā qarq sōd-and  
       (in)(sea) (drown)(became-they)

'those who didn't know how to swim were drowned in the sea'

- (10) ānhā ke sēnā nemidunest-and tu daryā  
       qarq sōd-and

'those (people), who didn't know how to swim, were drowned in the sea'

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1. Lambton (1953), p. 77. The term 'descriptive' in the quotation refers to the type of relative clause which is commonly called 'appositive' (or nonrestrictive).

Sentences such as (9) and (10) involve relative clauses of restrictive and appositive type, respectively. In (9), a particular subset of people is identified by the embedded sentence meaning 'who didn't know how to swim'; whereas in (10), this embedded sentence just adds more information about those people who were drowned. The obvious syntactic difference between restrictive and appositive relative clauses is, as illustrated by sentences in (9) and (10) above, the linking morpheme -i which intervenes between head-NPs and restrictive relative clauses. This morpheme is, in fact, an important surface structure factor in distinguishing restrictive relative clauses from appositives (see 5.2.1d). In sentences with appositive relative clauses the absence of the linking morpheme -i between the head-NP and the relative clause does usually require a short pause in the spoken language. Thus, for the sake of simpler presentation, appositive relative clauses are, in this study, distinguished by commas separating them from head-NPs (and the rest of matrix sentences).

On examining informants about the formation of relative clauses in the spoken language, an interesting point emerged : that speakers of Persian use appositives far less than restrictives. There are, of course, cases in the language, such as relativization with proper nouns, where speakers can only use the appositive type of relative clause. But, apart from these obvious cases, the restrictive type of relative clause is preferred in

colloquial Persian to the appositive. However, the two types of relative clause are used equally freely in the written language.

In the discussion of relative clauses to be presented in this chapter, the terminology used is as follows. NPs which take relative clauses (hereafter, RCs) as their postmodifiers are referred to as 'head-NPs'. Identical to these, NPs of the embedded sentences, which are relativized in the surface structure, are called 'relativized-NPs' or simply 'rel-NPs'. The linking morpheme -i required between head-NPs and restrictive RCs is represented as 'rel-i'. Finally, the complementizer ke 'that', which appears between head-NPs and their RCs, is called 'ke-rel'. To clarify the terminology, the head-NP in the sentences (9) and (10) is ānhā 'they'; the rel-i appears only in (9); the ke-rel has occurred in both sentences; and RCs used in these sentences are of the type restrictive and appositive respectively.

### 5.1.2 RCs in Traditional Grammars

Traditional grammarians of Persian can, with regard to their observations on RCs, be classed into two groups, as identified below.

(a) The first group consists of those grammarians such as Gharib et al (1950a) and Azadi-Ardakani (1970), who have considered RCs as constructions with the particle ke 'that' in its conjunctive function. Such function is, of course, differentiated from other functions such as,

for instance, complementation in sentences like (11) below.

- (11) be -s goft-am / ke fardā  
 (to)(him)(told-I) s (that)(tomorrow)  
 biyā-d injā /  
 (comes-he)(here) s  
 'I told him to come here tomorrow'

Since different types of construction involving ke 'that' (regardless of their syntactic structure) are, in these grammars, all treated under the same topic as 'ke-constructions' or 'meanings of ke', it is not surprising, therefore, that Hajati (1977) in his criticism of traditional Iranian grammarians writes :

"It is no exaggeration to say that Iranian scholars have as yet no understanding of the ke-construction in general."<sup>1</sup>

However, Sho'ar and Hakemi's (1969, p. 86) description of conjunctive ke 'that' as that which assigns adjectival function to its following sentence, separates clearly at least in the traditional view, one type of construction with ke 'that' from others. The general characteristic of this group of traditional grammarians is that they concentrate mostly on ke 'that' and its functions, and that their attention does not go further to, for instance, the precise identification of relative clauses or their syntactic properties.

(b) The second group of traditional grammarians

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1. Hajati (1977), p. 51.

consists of those such as Lambton (1953) and Thackston, Jr. (1978) whose consideration of RCs goes further, dealing with them independently as 'subordinate clauses' separate from other ke-constructions. These grammarians have characteristically distinguished restrictives from appositives.<sup>1</sup> In Thackston's (1978) words, this distinction is stated as :

"As in English, there are two types of relative clauses in Persian, the selective, determinate or restrictive and the purely descriptive or non-restrictive, both of which are introduced by the relative pronoun ke, which is never stressed."<sup>2</sup>

Traditional grammarians of this group have mostly accounted for the ke-rel as the relative pronoun of Persian, corresponding to who, which, etc. of English.<sup>3</sup> It will be argued later in this study (in 5.2.1c) that Persian (unlike English) does not have any relative pronoun whatsoever.

These grammarians have also collectively referred to the rel-i as the (only) marker for restrictive RCs. This

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1. Rubinchik (1971), pp. 124-125, calls relative clauses "Attributive Clauses" which, as he discusses their differences, are of two types : "Proper-Attributive" and "Attributive-Explanatory" clauses. His description of each type correlates with the two types restrictive and appositive RCs (discussed in 5.2.1d) respectively.
  2. Thackston, Jr. (1978), p. 125.
  3. See, for instance, the quotation presented above from Thackston, Jr. (1978), p. 125; and also Lambton (1953), pp. 75-77.

view will be retained here in the discussion to be presented in 5.2.1b, where it will be argued that rel-i is a base-generated constituent of restrictive RCs.

In conclusion, traditional grammarians (of both the groups discussed above), in spite of their attempts to identify RCs as those with conjunctive ke 'that' or subordinate clauses, have left open a number of significant issues, including the formation of RCs and the syntactic differences between restrictives and appositives. Such issues will be discussed and explained more satisfactorily in terms of the analysis of Persian relativization presented in section 5.2.

### 5.1.3 RCs in Generative Grammars

Persian RCs, unlike almost any other type of Persian NP-modifier, have been the subject of research and discussion in several dissertations written within the framework of generative grammar.<sup>1</sup> Among these, the writer, unfortunately, had access only to Vajdi (1976) and Hajati (1977), both of which will be used and referred to very frequently in the discussions of Persian relativization here. A suitable point from which to commence would therefore be a brief review of Vajdi (1976) and Hajati (1977)

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1. A list of books and dissertations concerning Persian RCs is given in Hajati (1977), p. 106. Notice that this includes only works which have appeared before 1977 (when Hajati's Ph.D. thesis was submitted).
  2. See, for instance, Stockwell et al (1973), p. 427, and Bach (1974), p. 267.



in respect of their treatment of Persian RCs, as presented in 5.1.3a below.

Earlier in 5.1, reference was made to Ross' (1976) analysis for restrictive RCs as embedded sentences in head-NPs (illustrated by the schema (2) above). This analysis is usually referred to in the literature as the 'NP-S' analysis.<sup>1</sup> Since the analysis of Persian RCs in both Vajdi (1976) and Hajati (1977) is based, more or less, on the same configurations as used by Ross (1976) for English relativization, the review of RCs in Persian generative grammars will be presented under the general topic of the 'NP-S' analysis.

The arguments to be presented in section 5.2 on the syntactic structure of restrictive and appositive RCs in Persian proposes a theory somewhat similar to that of Jackendoff (1977b) for English relativization, in terms of the X-bar Convention. Thus, for the purpose of clarifying the analysis of Persian RCs presented here, it seems both interesting and necessary to take a brief look at Jackendoff's (1977b) analysis. Such a review will be presented in 5.1.3b, but first the NP-S analysis will be examined, as follows.

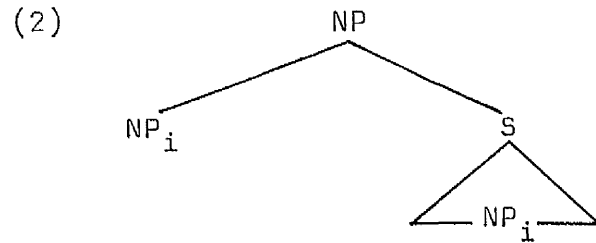
### 5.1.3a The NP-S Analysis

To illustrate the nature of the syntactic structure

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1. See, for instance, Stockwell et al (1973), p. 427, and Bach (1974), p. 267.

of the NP-S analysis, the structure schema (2) given earlier is repeated below.



Recall that the head-NP and the rel-NP, both marked in (2) with the subscript i, must be identical and coreferential.

The NP-S analysis was, as mentioned earlier, originally proposed for the syntactic structure of restrictive RCs, and not appositives, in English. The application of this analysis in both Vajdi (1976) and Hajati (1977) to Persian RCs is similarly devoted to restrictives, and not appositives. To be more specific, both Vajdi (1976) and Hajati (1977) are only concerned with restrictives, and the problem of appositives in Persian is left undiscussed.

Vajdi's (1976) account of restrictive RCs in Persian consists of a rather short discussion followed by a transformational rule, on which there are a few points to be made here. To demonstrate these points, let us first look at her rule as quoted below.

(12) "I relative clause formation (restrictive):

$$\begin{array}{ccccccc}
 \text{SD : } & X & - \text{ } \text{NP} & - \text{ } \text{NP} & - \left\{ \begin{array}{l} \text{NP} \\ \text{AdjP} \\ \text{P- NP} \\ \text{PP} \end{array} \right\} & - \text{ } \text{S} & - \text{ } \text{NP} & - \text{ } \text{Z} \\
 & & \text{NP} & \text{S} & & & & \\
 & 1 & - & 2 & - & 3 & - & 4 & - & 5 & - & 6
 \end{array}$$

Oblig. →

$$\begin{array}{ccccccc}
 \text{SC : } & 1 & - & 2 + i - \text{ke} - 3 & (+i \text{ if } 5 & - 4 (+i \text{ if } 5 & - 5 & - 6 \\
 & & & & \text{is } \underline{\text{budan}} & \text{is not} & & \\
 & & & & \text{or } \underline{\text{sodan}} & \underline{\text{budan}} \text{ or} & & \\
 & & & & & \underline{\text{sodan}} & & 
 \end{array}$$

Condition : (a) if 5 is budan or sodan, 2 and 3 must be identical and coreferential.

(b) if 5 is not budan or sodan, 2 and 4 must be identical and coreferential."<sup>1</sup>

Vajdi's (1976) transformational rule of restrictive RC-formation (given above) is open to controversial syntactic points, some of which are as follows. First, notice that ke-rel, the complementizer, is introduced transformationally to the structural description of RCs, as a conjunction between the head-NP and embedded sentences. Such treatment of the ke-rel will be rejected on the strength of discussions to be presented in 5.2.1c that ke 'that' is a complementizer which actually exists in the structure of all types of embedding constructions, including RCs, and must therefore be generated by the first PS-rules of RC formation.

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1. Vajdi (1976), p. 66.

Another controversial point about the rule in (12) is that contrary to Vajdi's discussions, it does not generate grammatical surface structure sentences. Before discussing this, notice also that this rule is so wrongly formulated that condition (b)- that is, if 5 is not budan 'to be' or sodan 'to become', 2 and 4 must be identical and coreferential- can never be met if the item in 4 is an adjective phrase or prepositional phrase, as permitted by the rule. To be more specific, an NP, used as item 2 (of the rule in (12)), can not be structurally identical with an item in 4, if it (ie, the item in 4) is an adjective phrase or prepositional phrase.

In addition to this misformulation, Vajdi's rule of restrictive RC-formation (as mentioned earlier) does not guarantee grammatical surface structures either. To demonstrate this, consider, for instance, the structural description of the following two NP-constructions (13a) and (14a) with embedded sentences whose verbs (that is, the item 5 of the rule in (12)) are bud 'was', the past tense of the verb budan 'to be', and tahsil-mikard-am 'was studying-I', respectively.

(13a)  $\frac{\text{madrese}}{(\text{school})} \text{S} \left[ \frac{\text{madrese}}{(\text{school})} \left[ \frac{\text{nazdike}}{(\text{near})} \text{NP} \left[ \frac{\text{xune}}{(\text{house})} \right] \text{NP} \right] \right]$   
 $\frac{\text{bud}}{(\text{was})} \text{S}$

(14a)  $\frac{\text{madrese}}{(\text{school})} \text{S} \left[ \frac{\text{man}}{(\text{I})} \left[ \frac{\text{dar}}{(\text{in})} \text{NP} \left[ \frac{\text{madrese}}{(\text{school})} \right] \text{NP} \right] \right]$   
 $\frac{\text{tahsil-mikard-am}}{(\text{was studying-I})} \text{S}$

Applying the rule in (12) to (13a) and (14a) produces structures like (13b) and (14b) below respectively, both of which are ungrammatical. The point needs to be made here that the two occurrences of the noun madrese 'school' in both (13a) and (14a) are identical and coreferential. Notice that (13a) meets condition (a), and (14a) condition (b) of the rule.

(13b)\* madrese -?i ke madrese -i nazdike xune bud.

(14b)\* madrese -?i ke man dar madrese-?i tahsil-mikard-am.

On the basis of simple observations such as (13b) and (14b), it can be argued that Vajdi's rule in (12) is not properly formulated and therefore can not generate grammatical surface structure constructions. To avoid these problems, one may suggest, in addition to the rule in (12), another transformational rule with the function of deleting rel-NPs on their identity with head-NPs. Thus, operating the deletion rule on (13b), for instance, the resulting structure (13c) below is grammatical.

(13c) madrese -?i ke ∅ nazdike xune bud.  
'the school which was near the house'

Proposing such a rule as deletion transformation can not, however, solve the problem entirely, since (14c) below corresponding to (14b) with its rel-NP deleted will still be ungrammatical.

(14c)\* madrese -?i ke man (dar) Ø tahsil-mikard-  
-am.

To account for the ungrammaticality of NP-constructions like (14c), which is the output of the deletion transformation applied on (14b), one may also suggest a rule of pronominalization (as an alternative to the analysis presented in section 5.3) so as to operate on (14b) and replace the rel-NP madrese 'school', under its identity with the head-NP, with an appropriate pronoun. Having such a transformational rule, (14b) can then derive grammatical structures such as (14d) below.

(14d) madrese -?i ke man dar un tahsil-  
(that)  
mikard-am.  
'the school in which I was  
studying'

This, of course, can not be a general condition for the derivation of grammatical RCs, even within transformational framework, for reasons to be discussed in 5.3. For the present, notice that applying such a rule of pronominalization as proposed above on NPs like (13b), the result would, unlike (14d), still be ungrammatical, as illustrated below.

(13d)\* madrese -?i ke un nazdik-e xune bud

Unlike Vajdi (1976), Hajati (1977, pp. 113-119) discusses Persian relativization as a process with different independent transformational rules. The most significant

of such rules, which are involved in all cases of Persian RCs, are as follows.

- (15) i. i-Insertion (Ob)<sup>1</sup> - which attaches the rel-i to the head-NP.  
 ii. ke-Placement (Ob) - which places the ke-rel in front of embedded sentences.  
 iii. Pronominalization (Ob) - which pronominalizes the rel-NP under its identity with the head-NP.  
 iv. Pro-Deletion (Ob/Op) - which deletes the pronominalized rel-NP.

To demonstrate the operations carried out by each of these rules, consider the derivation of the sentence in (16d) through stages illustrated by (16a-c) below.

(16a) doxtar S doxtar diruz injā  
 (girl) (girl) (yesterday) (here)  
 bud qarar -e bā man  
 (was)S (supposed) (is)(with)(I)  
 ezdevāj-kon-e  
 (marry-she)

(16b) doxtar -i [ ke doxtar diruz injā bud ]...

(16c)\* doxtar -i ke u diruz injā bud ...  
 (she)

(16d) doxtar -i ke Ø diruz injā bud ...

'the girl whom you saw yesterday  
 is supposed to marry me'

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1. The abbreviations 'Ob' and 'Op' are used here to indicate that the application of the rule is considered to be obligatory and optional, respectively.

Structural description (16a) reflects the fact that Hajati's analysis of restrictive RCs is based on the NP-S analysis. Having such descriptions, the obligatory rules (15i) and (15ii) can be applied simultaneously to derive structures like (16b) which is still subject to further transformations to give a grammatical surface structure sentence, since its rel-NP, doxtar 'girl', is still intact. Once the rule (15iii) operates, it replaces the rel-NP of (16b) with an appropriate pronoun, which in cases like (16c) does not yet result in a grammatical structure. However, the pronominalized rel-NP in (16c) can further be deleted as in the grammatical (16d) by the rule in (15iv) whose status as an optional or obligatory transformation is stated differently (in Hajati (1971))<sup>1</sup> depending upon the grammatical position of the rel-NP in embedded sentences. With a deep structure such as (16a), the Pre-Deletion rule is an obligatory transformation, since (16c) with the pronominalized rel-NP is ungrammatical. This is, however, not the case when the rel-NP is the direct object of embedded sentence and in enclitic form. Consider, for instance, the pair of following sentences (17a), with the rel-NP in the enclitic form, and (17b), with the rel-NP deleted in the surface structure.

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1. See Hajati (1977), e.g., p. 117.



(17a) doxtar -i ke diruz did-i -s̄  
 (girl) (that)(yesterday)(saw-you)(her)

qarār -e bā man ezdevāj-kone  
 (supposed)(is)(with)(I) (marry-she)

'the girl you saw yesterday is  
 supposed to marry me'

(17b) doxtar -i ke diruz did-i ∅ ...

'the girl you saw yesterday is  
 supposed to marry me'

As illustrated above, with structures such as (17a) and (17b), in which the rel-NP is the direct object of embedded sentences and is in enclitic form, the application of the Pro-Deletion rule (15iv) must be considered to be optional, since both (17a) and (17b) are equally grammatical structures. Such conditions for the application of Hajati's Pro-Deletion transformation will be further examined critically in section 5.3, where a simpler analysis in terms of PS-rules (and no transformation) is provided for the process of pronominalization.

In the explanation for the transformational deletion of the pronominalized rel-NPs of RCs, Hajati also considers the deletion of the direct object (DO) marker -rā<sup>1</sup> as a process different from Pro-Deletion. He actually suggests an additional transformational rule called "Dangling-case (DO) Deletion"<sup>2</sup> for the deletion of the case-marker -rā

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1. The DO-marker -rā is also used in the spoken language as -ā or -ro and -o depending upon its phonetic context.
  2. Hajati (1977), pp. 115-116.

which applies after the rel-NP is deleted, as demonstrated by the following examples.

(18a)  $\frac{\text{doxtar}}{(\text{girl})} -i \left[ \begin{array}{l} \text{ke} \\ (\text{that})(\text{girl}) \end{array} \begin{array}{l} \text{doxtar} -o \text{ did-i} \\ -\text{DO}(\text{saw-you}) \end{array} \right]$

(18b)\* doxtar -i ke u -ro did-i

(18c)\* doxtar -i ke Ø -ro did-i

(18d) doxtar -i ke Ø -Ø did-i

'the girl you saw'

In Hajati's view, the deletion of the DO-marker -ro in (18d), for instance, must be carried out by a transformational rule different from his proposed Pro-Deletion (given in (15iv) above) assigned to delete rel-NPs. Contrary to this viewpoint,<sup>1</sup> it will be argued here that -rā is a marker of NPs when they are used as direct objects, and must be deleted when NPs get deleted. Thus, since the DO-marker -rā (like any other case marker) can not be used if its corresponding NP does not exist, it must be deleted simultaneously by the same (transformational) process which is assigned to delete NPs as direct objects. To clarify the grammatical significance of -rā as the DO-marker, some examples are provided below.

(19a) man un \_\_\_\_\_ pesar -o nemišnās-am  
(I) (that)(boy) -DO (Neg-know-I)

'I don't know that boy'

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1. Vajdi's (1976) account of the deletion of the DO-marker -rā for the rel-NPs is not clear.

(19b) un pesar -o man nemišnās-am

'I don't know that boy' (ie, that boy, I don't know)

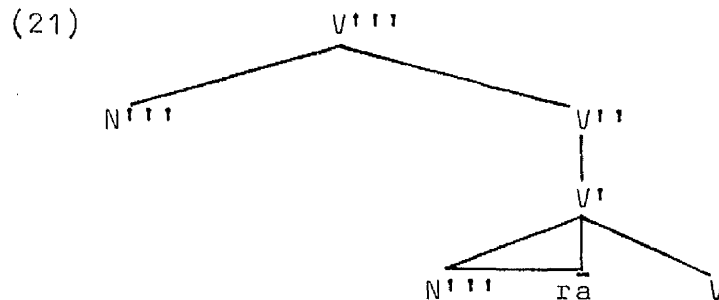
(20a) un pesar man -o nemišnās-e

'That boy doesn't know me'

(20b) man -o un pesar nemišnās-e

'that boy doesn't know me'

In sentences such as (19) and (20) above, in particular the topicalized forms (19b) and (20b), the only syntactic criterion to distinguish the direct object is the marker -rā. Considering this fact, and also that (19a) and (20a) are formed in the unmarked order SOV of Persian, the syntactic structure of sentences such as above can, in terms of the X-bar Convention, be demonstrated as follows.



With such analyses, it can easily be explained why -rā follows adjectives and RCs in sentences such as those given below.

(22) man un pesar -e qadboland -o  
 (I) (that)(boy) (tall) -DO

nemišnās-am  
 (Neg-know-I)

'I don't know that tall boy'

- (23) un pesar -i ke unjā vāysāde  
 (that)(boy) (that)(there)(is standing-he)  
-ro mišnās-i ?  
 -DO (know-you)

'do you know the boy who is  
 standing there?'

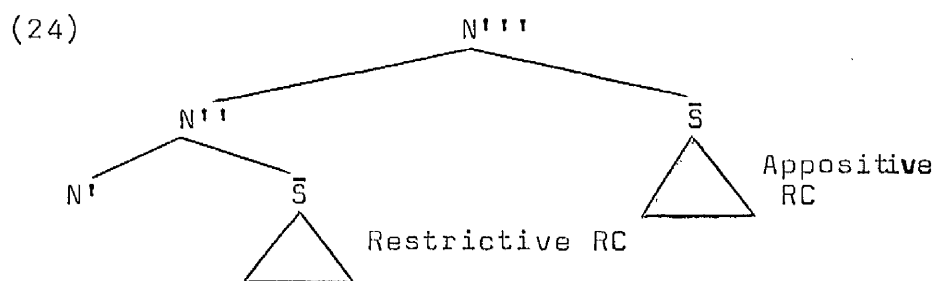
Cases such as these illustrate the fact that -rā is a marker of NPs which are used as the direct object. Furthermore, sentences like (23) provide evidence for the analysis illustrated in (21), that -rā is a marker of the syntactic category N''', since it follows RCs which are (as discussed in 5.2.2) N'''-complements.

Thus, if one accepts the view (presented above) that -rā is a DO-marker and must be deleted simultaneously when its corresponding NP is deleted, Hajati's (1977) analysis of -rā-deletion by a transformational rule separate from Pro-Deletion seems redundant.

Returning to Hajati's (1977) analysis of RCs, there are, of course, other points worth discussing here. Considering his major rules of relativization presented in (15), Hajati (1977) accounts for the rel-i and ke-rel as transformationally inserted constituents into NPs containing embedded sentences as their modifying RCs. These points raise the same objections as to Vajdi's (1976) treatment of the rel-i and ke-rel (mentioned earlier). Such objections together with the proposed analysis of the rel-i and ke-rel of this study will be presented in 5.2.1b and 5.2.1c, respectively.

### 5.1.3b Jackendoff's (1977) Analysis

Jackendoff (1977b, pp. 169-199), on the basis of his proposed X-bar formalisation of PS-grammar, argues for English RCs as deep structure NP-complements. In his analysis, restrictive and appositive RCs of English are syntactically different from one another in that the former, in deep structure, are daughters of  $N''$  and the latter are daughters of  $N'''$ . The general schema illustrating such an analysis would be something like (24) below.



Jackendoff's (1977b) analysis of RCs has the benefit that it accounts for numerous differences between restrictive and appositive types of English RCs. Consider, for instance, the fact that appositives must follow restrictives, if they cooccur in sentences such as :

(25) The boy that was invited to the party,  
who came late, is my friend.

(26)\* The boy, who came late, that was invited  
to the party is my friend.

Having a general theory for relativization as illustrated in (24), the order of cooccurrence of restrictives

and appositives can be handled very naturally, since N'-complements automatically precede N'''-complements.<sup>1</sup> It also automatically rules out ungrammatical sentences such as (26) in which appositives occur before restrictives.

Furthermore, the difference of deep structure between restrictives and appositives implies that the two types of RCs require different semantic interpretations, as is indeed the case for pairs of sentences such as (27) and (28).

(27) The boy who came to dinner has broken his arm.

(28) The boy, who came to dinner, has broken his arm.

Jackendoff's arguments in defending his analysis of English RCs involve several familiar problems arising from theories of relativization in English, including 'restrictive RCs and quantified head-NPs',<sup>2</sup> and 'stacked restrictives',<sup>3</sup> among which those that are relevant in one way or another to the analysis proposed for Persian RCs here will be brought up later. Bearing in mind such points, the following section presents a new and original theory of relativization for Persian, based on the version of the X-bar Convention introduced in 1.3, which is simple and general, but powerful enough to explain all instances

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1. See Jackendoff (1977b), pp. 171-172.

2. Ibid, pp. 182-185.

3. Ibid, pp. 185-190.

of Persian RCs.

## 5.2 SYNTACTIC STRUCTURE

So far an extensive definition and a brief review of Persian RCs in both traditional and generative grammars have been presented within previous sections. In this section, a new investigation will be made of the syntactic structure of RCs, which is intended to establish an original general theory of relativization applicable to both restrictive and appositive RCs in Persian. To begin with, the presentation of this section is divided into two subsections 5.2.1 and 5.2.2, the former is further divided into smaller parts. In short, subsection 5.2.1 is a survey of the elements of RCs and of the differences between restrictives and appositives; it contains four parts entitled, in order of presentation, 5.2.1a 'RCs as Embedded Sentences', 5.2.1b 'The Relative -i', 5.2.1c 'The Complementizer ke', and 5.2.1d 'Restrictives vs. Appositives'. Following this subsection, 5.2.2 presents arguments concerning the syntax of Persian RCs.

### 5.2.1a RCs as Embedded Sentences

The first step towards analysing the syntactic structure of RCs is to show that RCs are embedded sentences within head-NPs. In terms of the X-bar Convention, this involves the determination of which syntactic categories (out of the available nominals N''', N'', and N') dominate

the two types restrictive and appositive RCs. Such arguments will be presented in 5.2.2. For the present, in order to illustrate the fact that RCs are sentences embedded within NPs with nominal heads, some examples of cases in which syntactic processes involve simple NPs exactly like those NP-constructions with RCs will be provided as follows. First, consider sentences (29a) and (30a) and their corresponding forms (29b) and (30b) with restrictive and appositive RCs respectively.

- (29a) polis dozd-hā -ro diruz  
 (police)(thieves) -DO (yesterday)  
 dastgir-kard  
 (arrested-he)  
 'police arrested the thieves  
 yesterday'

- (29b) polis dozd-hā / -?i ke moddat-hā  
 (that)(long time)  
 tahte ta?qib bud-and / -o diruz  
 (under) (pursuit)(were-they)-DO  
 dastgir-kard  
 'police arrested the thieves  
 who were pursued for a long  
 time yesterday'

- (30a) dus -dār-am dar esfahān zendegi-kon-am  
 (like-I) (in)(Esfahan)(live-I)  
 'I like to live in Esfahan'

- (30b) dus -dār-am dar esfahān, / ke zamāni  
 (that)(once)  
 pāyetaxt-e ?irān bud-e / ,zendegi-  
 (capital-of)(Iran) (has been-it)  
 kon-am 'I like to live in Esfahan, which  
 was once the capital of Iran'



Now, having simple NPs in (29a) and (30a) and what is taken here as complex NPs with RCs in (29b) and (30b) respectively, observe that :

1. Pronouns may substitute for NPs (and their embedded RCs). Thus, replacing NPs (together with their following RCs) with pronouns results in the following grammatical sentences (31) and (32) corresponding to those in (29) and (30) above respectively.

(31) polis ānhā -ro diruz dastgir-kard  
(they)  
'police arrested them yesterday'

(32) dus -dār-am dar unjā zendegi-kon-am  
(there)  
'I like to live there'

2. Under the rule of passivization, however it is formulated for Persian,<sup>1</sup> both simple NPs and complex NPs with RCs are treated identically. For instance, passivizing (29a) and (29b), the result would be sentences (33) and (34) below, respectively.

(33) dozd-hā diruz dastgir-šod-and  
'thieves were arrested yesterday'

(34) dozd-hā / -?i ke moddat-hā tahte ta?qib  
bud-and 7 diruz dastgir-šod-and  
'the thieves who were pursued for  
a long time were arrested yesterday'

---

1. For general rules of passivisation in Persian, see Lambton (1953), p. 53.

3. Providing that case-markers such as -rā (indicating the direct object position of NPs) are present, both simple NPs and complex NPs with RCs can, in the spoken form of the language, freely appear with a different word-order from that of standard Persian.<sup>1</sup> Thus, considering sentences in (29), for instance, both the simple NP dozd-hā 'thieves' in (29a) and its corresponding form with RC in (29b) can also appear preceding the subject, or, very rarely, follow the verb, as illustrated in (35) and (36) below.

(35a) dozd-hā -ro polis diruz dastgir-kard  
'police arrested the thieves  
yesterday'

(35b) dozd-hā /-?i ke moddat-hā tahte ta?qib  
bud-and 7-o polis diruz dastgir-kard  
'police arrested the thieves  
who were pursued for a long  
time yesterday'

(36a) polis diruz dastgir-kard dozd-hā -ro

(36b) polis diruz dastgir-kard dozd-hā /-?i  
ke moddat-hā tahte ta?qib bud-and 7 -o

4. As shown in (35a) and (35b), both simple NPs and complex NPs with RCs can move as a single constituent (NP) to the front of sentences as their 'focus' elements. This element is separated from the rest of the sentence

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1. For word-order of Persian, see also the Introduction in 1.2.

by a break in intonation. To clarify this, sentences (35a) and (35b) are repeated below with commas to mark the break in intonation in separating the focus from the rest of the sentence.

(37a) dozd-hā -ro, polis diruz dastgir-kard

'the thieves, the police  
arrested yesterday'

(37b) dozd-hā [ -?i ke moddat-hā tahte ta?qib  
bud-and ] -o, polis diruz dastgir-kard

'the thieves who were pursued  
for a long time, the police  
arrested yesterday'

On the basis of observations such as these, which explicitly demonstrate that any syntactic process affecting NPs will also affect their following RCs, it is argued here that RCs are embedded sentences in NPs.

### 5.2.1b The Relative -i

As pointed out in 5.1.3a, the rel-i is an enclitic which attaches to head-NPs to mark RCs as restrictive. In view of its predictability of occurrence, it is now claimed here that rel-i must be introduced to NPs containing restrictive RCs by the same PS-rules which introduce restrictive RCs as embedded sentences within NPs. Considering, for the present purpose, that restrictive RCs are embedded sentences within N''', such a PS-rule would, in the framework employed in this study, look like the following, in which R represents RCs.

(38) 
$$N''' \left[ \begin{array}{c} N''' \\ -i \end{array} \right. R \left. \right]$$

Having such an analysis, NP-constructions with restrictive RCs such as the following (39) and (40) must therefore have their syntactic structure generally like (41) below.

(39) 
$$\begin{array}{ccccccc} \text{pesar} & -i & \text{ke} & \text{dust-e} & \text{to} & -?e & \\ (\text{boy}) & & (\text{that}) & (\text{friend-of}) & (\text{you}) & (\text{is}) & \\ & & & & & & \\ & & & & & & \text{'the boy who is your friend'} \end{array}$$

(40) 
$$\begin{array}{ccccccc} \text{ketab} & -i & \text{ke} & \text{be} & \text{man} & \text{dād-i} & \\ (\text{book}) & & (\text{that}) & (\text{to}) & (\text{I}) & (\text{gave-you}) & \\ & & & & & & \\ & & & & & & \text{'the book which you gave me'} \end{array}$$

(41) 
$$\begin{array}{c} N''' \\ \swarrow \quad \downarrow \quad \searrow \\ N''' \quad i \quad R \end{array}$$

This analysis is compatible with the analysis of the linking morpheme -e of, for instance, adjectives, presented in 2.1.2. In addition, this simplifies the syntactic structure of restrictive RCs and predicts from the beginning the syntactic differences between restrictives and appositives. This approach differs completely from Vajdi's (1976) and Hajati's (1977) analyses (discussed in 5.1.3a) that introduce the rel-i by additional transformational rules, to the deep structure of NPs with restrictive RCs.<sup>1</sup> On the strength of the predictability

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1. See the obligatory transformational rule of "i-Insertion" in Hajati (1977), p. 116; and also →

of the rel-i as the marker of restrictives in all cases of RCs, the transformational account would seem redundant, and the analysis made here (for the rel-i as a base-generated constituent of NPs) is more satisfactory.

Similarities between the rel-i and the indefinite marker -i (discussed in 2.2.3) have caused some confusion in traditional grammars. For instance, Azadi-Ardakani (1970, p. 25) identifies the rel-i with the indefinite marker, whereas Zonnour (1969, p. 76) considers the rel-i as a special case of the indefinite marker. Taleghani (1967) criticizes those who treat the rel-i (or the "descriptive -i", as he calls it) as identical with the indefinite marker -i, as argues that :

"Descriptive -i can not be a marker for indefiniteness, since the word preceding descriptive -i is described and defined by [its following] sentence. Thus, [the word] is not indefinite because it is described and defined, and to some extent it is definite."<sup>1</sup>

Although Taleghani (1967) distinguishes the rel-i from the indefinite marker, he does however hesitate to consider the head-NPs of RCs as definite. He further claims that head-NPs with the rel-i are typically neither indefinite nor definite.<sup>2</sup> On the question of both the

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→ Vajdi's (1976), p. 66, rule of RC-formation.

1. Taleghani (1967), pp. 247-248, (translation and also explanations within brackets are my own).

2. Ibid, p. 248.

similarity and differences between the rel-i, the marker of restrictive RCs, and the indefinite marker -i, Lambton (1953) observes that since the two markers appear similarly at the end of NPs and have the same written form, "... there will be a confusion between a definite antecedent [ie, the head-noun] followed by the Relative ke and an indefinite antecedent to which Indefinite -i has been already added ..."<sup>1</sup> To clear up these confusions, the rel-i and how it differs from the indefinite marker will be further examined here, as follows.

The only similarity between the rel-i and the indefinite marker is that they are both added to the end of NPs. To clarify this similarity, consider the following examples.

- (42) pesar -i az dur miyā-d  
(boy)-Indef.(from)(far)(is coming-he)

'a boy is coming from far'

- (43) pesar -i ke az dur miyā-d dust-e  
(boy) (that) (friend-of)

man -e  
(I) (is)

'the boy who is coming from  
far is my friend'

The -i in sentence (42) is the indefinite marker which indicates that its preceding noun (that is, pesar 'boy') is indefinite. In sentence (43), the -i attached

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1. Lambton (1953), p. 77, (explanations within brackets are my own).

to the head-noun pesar 'boy' is the rel-i which marks its following RC as restrictive. Since the two markers occupy the same position, they are mutually exclusive (as discussed earlier in 2.2.3). The following arguments demonstrate further differences.

As discussed in 2.2.2 (about indefinite NPs), an alternative way to make Persian nouns indefinite is by the prenominal use of the numeral yek 'a' as the indefinite article. Thus, the semantic equivalent of the indefinite noun pesar-i 'a boy' in (42), for instance, is yek pesar 'a boy', as in (44) below. Now, having mentioned this, observe the substitution of yek 'a' in its function as the indefinite article for the indefinite marker -i in sentences (42) and (43), as given in (44) and (45) below respectively.

- (44) yek pesar az dur miyā-d  
 (a) (boy) (from)(far)(is coming-he)  
 'a boy is coming from far'

- (45)\* yek pesar ke az dur miyā-d dust-e man -e

The ungrammaticality of sentences like (45) with yek 'a' as the indefinite article for head-nouns followed by RCs is due to two somewhat similar facts. First, notice that NPs, as discussed previously in 2.2, can only take embedded sentences as their postnominal modifiers if they are definite. Such definite NPs (with RCs) can not therefore take indefinite articles. Second, the rel-i in sentences such as (43) with restrictive RCs is indeed different from

the indefinite marker and, therefore, can not be replaced by yek 'a'.

Another fact in support of the distinction between the rel-i and the indefinite marker -i comes from the opposition of demonstratives in 'this' and un 'that' with the indefinite marker -i, as pointed out in 2.2.3. In more detail, as a general rule of Persian, demonstratives in 'this' and un 'that' (discussed in section 2.3) when used attributively function semantically to make nouns definite.<sup>1</sup> In this function, demonstrative are in opposition to the indefinite marker. Thus, replacing the indefinite marker -i in the sentence (42) above with the demonstrative un 'that', for instance, will result in an acceptable sentence but with a definite NP, such as (46) below.

- (46) un pesar az dur miyā-d  
'the/that boy is coming from far'

Now, notice that demonstratives in 'this' and un 'that', in their function as definite article, can not be added to NPs which are already marked by the indefinite marker. The reason for this is quite clear : an NP can either be definite or indefinite, but not both. Hence, sentences like (47) below with both demonstratives (in their function as definite articles) and the indefinite marker -i are not grammatical.

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1. See, for instance, Gharib et al (1950a), p. 23.



(47)\* un pesar -i az dur miyā-d

This sort of ungrammaticality is not found with RCs, since -i attachment to the end of head-NPs (of RCs) is, in fact, the rel-i, and not the indefinite marker. Sentences such as (43) above can therefore be freely used with either of the demonstratives, as illustrated in (48) below.

(48) in/un pesar -i ke az dur miyā-d dust-e  
man -e

'this/that boy who is coming  
from far is my friend'

Comparing sentences like (48) with those such as (47), it becomes clear that the rel-i (of RCs) is not an indefinite marker.

An interesting fact in support of the distinction being made here between the rel-i and the indefinite marker, derives from the colloquial use of demonstratives in 'this' and un 'that' as head-nouns in sentences with RCs. That is, these demonstratives in spoken Persian can also be used as head-nouns accepting the rel-i to mark their following RCs as restrictive. To clarify the matter, consider examples given below.

(49) in -i ke goft-i doruq-e mahz -e  
(this) (that)(said-you)(lie) (sheer)(is)

'this that you said is a sheer  
lie (ie, what you said is a  
sheer lie)

- (50) in ke goft-i ahmad az  
 (this) (that) (said-you) (Ahmad) (from)
- safar bargašt-e, doruq-e mahz -e  
 (journey) (has come back) (lie) (sheer) (is)
- 'that you said Ahmad has come  
 back from (his) journey was  
 a sheer lie'

Sentences (49) and (50) have RCs of the types restrictive and appositive, respectively. Notice that in (49) the demonstrative in 'this' has accepted the rel-i followed by the restrictive RC. This further clarifies the claim made above that the rel-i is indeed different from the indefinite marker -i; otherwise the -i in (49) could also be the indefinite marker attached to demonstratives which can (as mentioned in 2.3) also function as definite articles of Persian, and then sentences such as (49) above would be ungrammatical.

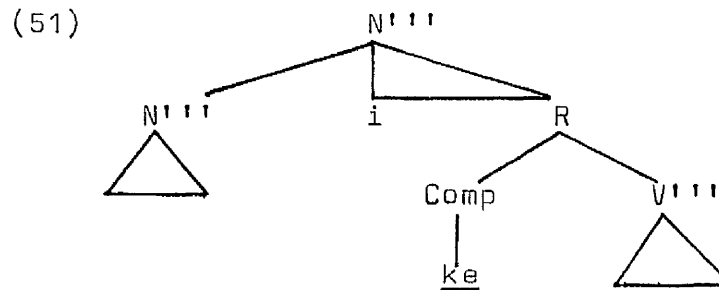
#### 5.2.1c The Complementizer ke

Among different types of 'ke-constructions',<sup>1</sup> in Persian, one should distinguish ke-rel as a complementizer which is always employed when introducing embedded sentences as RCs. The complementizer ke can not be deleted from RCs, and in cases of extraposition of RCs (see, example (53) below), it attaches to the embedded sentence and moves alongside with it. A general structure

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1. See, for instance, Taleghani (1967).

schema illustrating the syntactic position of the ke-rel in embedded sentences used as restrictive RCs would therefore be, in this analysis (to be discussed later), something like (51), in which N''' is the head-NP and R is the sentential node used for RCs comprising the ke-rel as its complementizer and V'''



As the marker of embedded tensed sentences, it is predictable that ke-rel should appear in the appositive type RC as well as in the restrictive. In the examples below, consider the ke-rel in sentence (52) with restrictive RC, in sentence (53) with extraposed restrictive RC, and in sentence (54) with appositive RC.

- (52) pesar -i ke hiċ-vagt dars-nemixund  
 (boy) (that)(never) (studied)  
 tu emtehān rad-šod  
 (in)(exam) (failed)  
 'the boy who never studied  
 failed in exams'

- (53) pesar -i tu emtehān rad-šod ke hiċ-vagt  
dars-nemixund  
 'the boy failed in exams  
 who never studied'

- (54) pesar, ke hič-vaqt dars nemixund, tu  
 emtehān rad-šod  
 'the boy, who never studied,  
 failed in exams'

The ke-rel is treated by most scholars, including Lmabton (1953, p. 75) and Thackston, Jr. (1978, p. 128), as a relative pronoun corresponding to 'who', 'which', etc. of English. Against such treatments, it will be argued below (by bringing up an original discussion followed by Vajdi's (1976) and Hajati's (1977) viewpoints, successively) that the ke-rel is (as mentioned above) simply a complementizer, and this supports the claim made by Hajati (1977) that "Persian relative clauses have no relative pronoun equivalent to Wh-relative pronouns in English".<sup>1</sup> Towards this aim, arguments are as follows.

First, unlike all pronouns in Persian, the ke-rel does not agree with the head-NP (or its equivalent rel-NP) on the dimensions of animate/inanimate, singular/plural, etc. In other words, regardless of the semantic properties of the head-NP (or the rel-NP), the ke-rel always appears in the same form (that is, ke), as is expected of a complementizer but not of pronouns (including relative pronouns). For instance, consider the occurrence of ke-rel in the following sentences.

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1. Hajati (1977), p. 103.

- (55) *pesar -i ke tu mosābeqe ?aval sōd*  
 (boy) (that)(in)(race) (first)(became-he)

*dust -e ali -ye*  
 (friend-of)(Ali)(is)

'the boy who was first in the  
 race is Ali's friend'

- (56) *māsin -i ke xaride -?i kami*  
 (car) (that)(have bought-you) (a little)

*gerun -e*  
 (expensive)(is)

'the car which you have  
 bought is a little expensive'

Notice that if the ke-rel were a relative pronoun, it would be a substitution for pesar 'boy', an animate noun, in (55), and for māsin 'car', an inanimate noun, in (56), and would therefore be expected to appear in rather different forms, as other pronouns do.

Secondly, there are cases of RCs in which relativization also involves the pronominalization (see section 5.3) of rel-NPs that appear either as 'free' forms such as man 'I', to 'you', u 'he/she', etc. or as enclitics like -am 'I', -i 'you', -ad 'he/she', etc. To clarify this, consider the syntactic structure of RCs in the following sentences.

- (57a) *doxtar -i ke to u-ro bā*  
 (girl) (that)(you)(she)-DO(with)

*maryam eštēbāh gerefte-bud-i*  
 (Maryam)(mistake)(had taken-you)

*hamsāye -e man -e*  
 (neighbour-of) (I) (is)

'the girl whom you had mistaken  
 for Maryam is my neighbour'

- (57b) doxtar -i [ke Ø bā maryam eštabāh gerefte-  
bud-i ] hamsāye -e man -e

'the girl whom you had mistaken  
for Maryam is my neighbour'

Unlike the sentence in (57b), in which the rel-NP does not appear in lexical form, sentence (57a) is an example of those cases of RCs in which the rel-NP must be used in the form of an appropriate pronoun (which, in this case, is u 'he/she' corresponding to the rel-NP doxtar 'girl'). Sentences such as (57a) show up the fact that the ke-rel could not be a relative pronoun, since it is the personal pronoun u 'he/she' which is actually substituted for the rel-NP, and not ke 'that'. A more typical case with these types of RCs is that, as Vajdi (1976, pp. 70-71) has also observed, some RCs must necessarily have their rel-NPs pronominalized. That is to say that sentences of the type with the ke-rel shown below, are ungrammatical unless a copy of the rel-NP is left as a pronoun. For examples of such cases, consider the following sentences.

- (58a) otobus -i ke bā -s/un be  
(bus) (that) (with) (it) (to)  
madrese mir-i emruz xarāb-šode  
(school) (go-you) (today) (is broken down)

'the bus by which you go to  
school broke down today'

- (58b)\* otobus -i ke (bā) Ø be madrese mir-i  
emruz xarāb-šode

As illustrated in these examples, the ke-rel is used in all instances as the complementizer introducing the RCs. It can not be a relative pronoun, otherwise it would occur alone in sentences like (58) and would not need personal pronouns in place of rel-NPs. Another argument in support of this view can also be found in Hajati (1977, p. 110), who offers examples of RCs with the emphatic pronoun xod 'self' in which the ke-rel is clearly shown as a "RC-marker", and not a relative pronoun. To follow his argument, consider his examples as follows.<sup>1</sup>

(59a) pesar-i    ⌈ ke       xod-e    pesar   ānhā   -ro  
               (boy)        (that)(self-of)(boy) (they)-DO  
               dide                ⌋ injā   -st  
               (has seen)        (here)(is)

(59b)\* pesar -i ke xod-e ke ānhā-ro dide  
               injā -st

(59c) pesar-i ke xod-e ∅ ānhā-ro dide  
               injā -st  
                                          'the boy who has seen them  
                                          themselves is here'

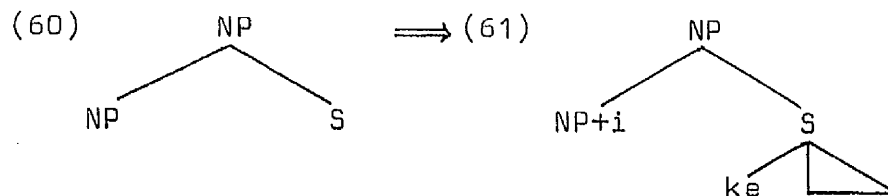
(59d) pesar -i ke xod-e u/-s ānhā-ro dide  
               injā -st  
                                          'the boy who has seen them  
                                          himself is here'

---

1. Examples (59a-d) above are adopted from Hajati (1977), p.110, with some minute changes in the presentation of the ke-rel as a base-generated complementizer, and also the change in the form of examples from the written to the spoken form

From examples such as these, it is obvious that the ke-rel can not be a (relative) pronoun substituting for the rel-NP pesar 'boy'. If it were a relative pronoun, sentences like (59b) with ke in place of the rel-NP would then be grammatical. But unlike (59b), sentences in (59c) without lexical rel-NP and (59d) with the rel-NP in the form of the pronoun u/-s 'he' are completely acceptable.

Discussing the ke-rel as a RC-marker and not the relative pronoun, Hajati(1977) then considers it as a constituent which, in the transformational framework he employs, is introduced to the deep structure of RCs by some kind of transformation which has already added -i to the head-NP.<sup>1</sup> This analysis for the ke-rel (and -i) can be presented schematically as (60) and (61) below.



Since Hajati (1977) does not put forward any argument for such analysis of the ke-rel (and also rel-i), and simply takes for granted that the ke-rel, as a complementizer, must be introduced transformationally, his view can not be discussed further here. However, on the basis of the facts about the contribution of ke-rel, that it always appears before embedded sentences and can not be deleted

1. See Hajati's (1977), p.116, "Transformations for Relativization".



if its following embedded sentence is a RC, this discussion can be concluded here by claiming that ke 'that' is a complementizer for tensed embedded sentences.

#### 5.2.1d Restrictives vs. Appositives

As pointed out in the Definition (given in 5.1.1), Persian RCs are of two types : Restrictive and Appositive. A major difference between the two types of RCs is that restrictives, but not appositives, require the linking morpheme rel-i (discussed in 5.2.1b) to attach to the right of their head-NPs. To illustrate this difference, some previous examples are repeated below.

- (62) ānhā -?i ke      sēnā      nemidunest-and  
       (those)    (that)(swimming) (didn't know-they)  
       tu    daryā qarq-sod-and  
       (in)(daryā)(were drowned-they)

'those who didn't know how to swim were drowned in the sea'

- (63) ānhā, ke sēnā nemidunest-and, tu daryā  
       qarq-sod-and

'those (people), who didn't know how to swim, were drowned in the sea'

As the two types of RCs differ in their syntactic structures (discussed in 5.2.2), it is to be expected that they also require different semantic interpretations (see 5.1.1). In addition to such differences, the two types of RCs also vary in their syntactic distribution, as

demonstrated below.

1. Appositives, unlike restrictives, can be used to modify proper nouns. Examples are :

(64) ahmad , ke qarār-bud fardā  
(Ahmad) (that)(was supposed) (tomorrow)

be injā biyā-d , emruz umade  
(to)(here)(come-he) (today)(has come)

'Ahmad, who was supposed to come  
here tomorrow, has come today'

(65)\* ahmad-i ke qarār-bud fardā be injā biyād  
emruz umad

However, the point should be mentioned here that proper nouns may in the colloquial style of a certain dialect of Persian rarely take an -i ending; this exhibits characteristics which differ both syntactically and semantically from those of either the rel-i or the indefinite marker. Since a closer study of this type of -i ending for proper nouns is not restrictly relevant to the discussion presented here, a few examples of such cases will suffice.

(66) ahmad-i dust -e man -e  
(Ahmad) (friend-of)(I)(is)  
'Ahmad is my friend'

(67) ahmad-i, ke qarār-bud fardā  
(that)(was supposed-he)(tomorrow)  
injā biyā-d , emruz umade<sup>1</sup>  
(here)(comes-he)(today)(has come-he)

'Ahmad, who was supposed to come  
here tomorrow, has come today'

---

1. Sentences in the dialect which permits using the →

This -i ending of proper nouns, as in examples (66) and (67), can not be the rel-i nor the indefinite marker, since neither of the latter can be used within proper nouns. Among major differences between the -i ending of proper nouns and the rel-i is that the former unlike the latter,<sup>1</sup> carries the primary stress of nouns. Thus, the proper noun ahmad-i in sentences (66) and (67), for instance, is pronounced as /ahma'di/. Such -i ending of proper nouns has sometimes the diminutive function. Thus, the proper noun ahmad-i in the sentences (66) and (67), for instance, is sometimes used to refer to 'little Ahmad'.

2. Appositives, unlike restrictives, can be used to modify NP's with possessive suffixes. Examples are such as :

- (68) doxtar-am,    ke    be    dānešgāh  
                   (daughter-my)(that)(to)(university)  
                   rafte ,    hanuz bar-nagāste  
                   (has gone)(yet) (has not come back)  
                                           'my daughter, who has gone to  
                                           university, has not come back  
                                           yet'

- (69)\* doxtar-am-i ke be dānešgāh rafte hanuz  
                                   bar-nagāste

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→ ending -i for proper nouns can never be pronounced in the formal way. Thus, the verb umade 'has come', for instance, can not have the formal pronunciation āmade-?ast 'has come' as its alternative in the formal language.

1. As observed by Lambton (1953), p. 78, the enclitic rel-i does not carry the primary stress of words in an unmarked stress pattern of Persian.

The fact that restrictive RCs can not be used with possessive elements suggests that possessive constructions and the -i of restrictive RCs are mutually exclusive. However, observing sentences such as (68) with NPs modified by both possessive element and appositive RC, Thackston, Jr. (1978, p. 126) interprets them as cases of restrictive RCs and wrongly concludes that NPs with a possessive element, when used as the head of a sentence with restrictive RC, do not take the rel-i. In other words, Thackston, Jr. accounts for appositive RCs with possessive head-NPs as restrictives which do not require the rel-i to link to their head-NP.

This approach of Thackston, Jr. overtly contradicts almost all generative analyses of Persian relativization (discussed in 5.1.3a) which realize restrictive RCs as those with the rel-i. Semantic interpretations of sentences such as (68) above can also be used to justify the claim that RCs used in sentences with head-NPs in the form of possessive constructions are appositive, and not restrictive. Furthermore, the test of extraposition of RCs, as mentioned below in 3, supplies a strong argument that RCs with head-NPs modified by possessive suffixes can not be restrictive. Consider, for instance, a sentence like (70a) below with a simple NP in contrast with (71a) where the head-NP has a possessive suffix. Notice that by applying the rule of extraposition to sentences (70a) and (71a), the results are grammatical (70b), and ungrammatical (71b) respectively.

(70a) pesar -i ke tu emtehān rad-šode-bud  
 (boy) (that) (in)(exam) (had failed-he)

dast-be-xodkoši-zad  
 (committed suicide)

'the boy who had failed the  
 exam committed suicide'

(71a) pesar-e man ke diruz did-i-š  
 (son-of)(I)(that)(yesterday)(saw-you-him)

sarmā-xorde  
 (has got cold)

'my son whom you saw (him)  
 yesterday has got cold'

(70b) pesar -i ke dast-be-xodkoši-zad tu emtehān  
rad-šode-bud

'the boy who committed suicide  
 had failed the exam'

(71b)\* pesar-e man sarmā-xorde ke diruz did-i-š

Since appositive RCs, but not restrictives, exhibit similar behaviour in respect of extraposition as the sentences in (71), that is, they do not undergo extraposition, RCs with head-NPs marked by possessive suffixes (such as that in (71a) above) must thus best be treated as of the type appositive. To clarify the syntactic similarities between sentences like (71a) with possessive marked head-NPs and those with appositive RCs, compare the set of sentences in (71) with those in (72) below. Notice that sentences with extraposed RCs in both sets are not grammatical.

(72a) ahmad, ke tu engelis dars-mixune,  
 (Ahmad) (that)(in)(England) (studies-he)

dust-e man -e  
 (friend-of)(I)(is)

'Ahmad, who is studying in  
 England, is my friend'

(72b)\* ahmad dust-e man -e ke tu engelis  
dars-mixune

In conclusion, syntactic similarities between appositives (like (72)) and those RCs with possessive marked head-NPs (like (71)) argue that the latter is of the appositive type.

3. As pointed out above, appositives, unlike restrictives, can not undergo extraposition. Examples of grammatical cases of extraposed restrictive RCs are those such as (70) above, and those of ungrammatical extraposed cases of appositive RCs are like (72).

In his study on extraposition of RCs, Hajati (1977, p. 131) confusingly assumes first that case-markers of rel-NPs can (under unspecified circumstances) move out of RCs to their head-nouns, and then argues that such movements of case-markers block the operation of extraposition. To clarify his view, some examples of extraposed RCs with and without the DO-marker are presented below.

(73a) ketāb [-i ke ketāb -ro.diruz  
 (book). (that) (book)-DO (yesterday)

ferestād-i / injā -st  
 (sent-you) (here)(is)

(73b) ketāb -i ke Ø diruz ferestād-i

injā -st

'the book which you sent yesterday  
is here'

(73c) ketāb -i injā -st ke Ø diruz ferestād-i

'the book is here which you sent  
yesterday'

(73d) ketāb -i -ro ke Ø diruz ferestād-i

injā -st

'the book which you sent yesterday  
is here'

(73e)\* ketāb -i -ro injā -st ke Ø diruz

ferestād-i

Comparing (73c) with (73e), the extraposed forms of (73b) and (73d) respectively, notice that (73e) with the head-NP also marked by the DO-marker -rā is ungrammatical. Hajati claims that the ungrammaticality of sentences like (73e) is due to the fact that extraposition of RCs is not possible if they contain head-NPs used as the subject of the matrix sentence, but also marked by -rā as the direct object. In general, Hajati believes that extraposition of RCs has much to do with the movement of case-markers to head-NPs.

Contrary to Hajati's account of the ungrammaticality of (73e), it will be argued below that (a) case-markers can not detach from their NPs and move out of RCs to head-NPs under any circumstances whatsoever, and (b) the

ungrammaticality of sentences like (73e) does not have to do with the extraposition of their RCs, but stems from the unpermitted addition of case-markers to their head-nouns.

First, to illustrate the fact that case-markers, in particular the IO- and PP-markers, can not detach from their marked NPs, consider some examples with marked rel-NPs, as follows.

- (74a) doxtar [ -i ke ketāb -o be doxtar  
(girl) (that)(book)-DO (to)(girl)  
dād-i hamsāye-ye mā -st  
(gave-you) (neighbour-of)(we)(is)

- (74b) doxtar -i ke ketāb -o be -s dād-i  
hamsāye-ye mā -st  
'the girl to whom you gave  
the book is our neighbour'

- (74c)\* doxtar -i ke ketāb -o (be) Ø dād-i  
hamsāye-ye mā -st

- (74d)\* be doxtar -i ke ketāb -o Ø dād-i  
hamsāye-ye mā -st

- (75a) doxtar [ -i ke bā doxtar harf-  
(girl) (that)(with) (girl) (were  
mizad-i hamsāye-ye mā -st  
talking-you) (neighbour-of) (we)(is)

- (75b) doxtar -i ke bā -s harf-mizad-i  
hamsāye-ye mā -st  
'the girl with whom you were  
talking is our neighbour'



(75c)\* doxtar -i ke (bā) Ø harf-mizad-i  
hamsāye-ye mā -st

(75d)\* bā doxtar -i ke Ø harf-mizad-i  
hamsāye-ye mā -st

As demonstrated above, examples (74c-d) and (75c-d) clearly show that case-markers, such as be 'to' indicating the IO-position of its NP and bā 'with', the preposition, can not detach from their marked NPs and move out of RCs.<sup>1</sup> Extraposing RCs in (74b) and (75b) will result in sentences (74e) and (75e) respectively, which, again, are not grammatical if their case-markers move out of RCs to head-NPs, as shown in (74f) and (75f), respectively.

(74e) doxtar-i hamsāye-ye mā -st ke ketāb-o  
be -s dād-i

'the girl is our neighbour  
to whom you gave the book'

- 
1. Observing sentences on which Hajati wrongly justifies the movement of case-markers from marked rel-NPs to head-NPs, which are used as the subject of matrix sentences, the point must be made clear here that Hajati's (1977, p. 131) examples such as (i) below (=his (61c)), with moved case-markers to head-NPs are not grammatical, either for the writer or his informants.

i. bā        pesar-i ke    da?vā-kard-i injā  
   (with)(boy)    (that)(fought-you) (here)

ni-st  
(Neg-is)

'the boy whom you fought with  
is not here'



below.

- (77) mard -i -ro diruz Ø tu mehmuni did -i  
 'the man whom you met at the  
 banquet yesterday'

However, by extraposing RCs such as (77), the condition for the addition of the DO-marker to the head-NP (that is, the interpretation as direct object) can not be met, and, as a consequence, the additional -rā disappears. Thus, corresponding to (77), the extraposed RC would be like (78) below.

- (78) mard -i mo?allem -e man -e ke diruz  
 (man) (teacher-of)(I) (is)(that)(yesterday)  
tu mehmuni did -i  
 (in)(banquet)(saw-you)  
 'a man is my teacher whom you  
 met at the banquet'

By specifying such a condition for the optional addition of the DO-marker to the head-NP of unextraposed RCs, a constraint is thus placed on the formation of ungrammatical extraposed RCs such as (79) below, corresponding to (78), with added DO-marker -rā.

- (79)\* mard -i -ro mo?allem -e man -e ke diruz  
Ø tu mehmuni did -i

To demonstrate the fact that such a function is not possible with any other case-markers, some examples are presented below, in which the head-NPs are the subject of matrix sentences and rel-NPs as the indirect objects of embedded sentences.

(80a) doxtar -i ke ketāb -o be -s dād -i  
 (girl) (that)(book)-DO (to)(her)(gave-you)

'the girl whom you gave the  
 book to'

(80b)\* doxtar -i be ke ketāb -o ∅ dād -i

(81a) doxtar -i ke barā -s ketāb -o  
 (girl) (that)(for)(her)(book)-DO

xarid -i 'the girl whom you bought  
 (bought-you) the book for'

(81b)\* doxtar -i barā ∅ ke ketāb -o xarid -i

Unlike the RC (77) with -rā, RCs such as (80a) and (81a) can not be grammatical if case-markers occur between head-NPs and their embedded sentences as shown in (80b) and (81b), respectively.

In conclusion, having specified the occurrence of the DO-marker -rā, ungrammatical extraposed RCs such as (73e) are not permitted to be formed in the language. Furthermore, the optional attachment of -rā to the head-NPs of RCs (as in the sentence (73d) above) can not be considered as the result of the movement of case-markers, and the extraposition of RCs does not have anything to do with such alleged (by Hajati) movements of case-markers.

### 5.2.2 RCs as NP-complements

Having discussed the elements of Persian relativization and also the differences between restrictive and appositive RCs in the previous section (5.2.1), this

section is devoted to arguments concerning the syntactic structure of RCs. To begin with, recall that RCs (of both types, restrictive and appositive) are described in 5.2.1a as embedded sentences within NPs. Following this, examples such as (82a-c) below illustrate the fact that RCs can not be used alone as head-NPs, but function syntactically as NP-modifiers (see also 5.1.1).

- (82a) ānhā xaste benazar-miresid-and  
(they)(tired)(looked-they)  
'they looked tired'

- (82b) ānhā /-?i ke az rāh -e dur  
(that)(from)(way-of)(far)  
umade-bud-and } xaste benazar-miresid-  
(had come-they)  
and  
'those who had come from a far way looked tired'

- (82c)\* /(-?i) ke az rāh -e dur umade-bud-and }  
xaste benazar-miresid-and

It now remains to consider which of the three available syntactic categories N''', N'', and N' have RCs as their complements. With regard to this, notice that RCs, as demonstrated by the examples below, always follow postnominal adjectives modifying the same head-nouns.

- (83) un pesar -e qadboland -i ke az dur  
(that)(boy) (tall) (that)(from)(far)  
dāre-miyā-d barādar -e man -e  
(is coming-he)(brother-of) (I) (is)  
'that tall boy who is coming from far is my brother'

- (84) un pesar -e qadboland, ke az dur dāre-  
miyā-d, barādar -e man -e

'that tall boy, who is coming  
from far is my brother'

Furthermore, the extraposition of restrictive RCs does not involve the rightward movement for postnominal adjectives. To demonstrate this fact, extraposing the restrictive RC in (83) results in the following grammatical structure.

- (85) un pesar -e qadboland -i barādar -e  
man -e ke az dur dāre-miyā-d

'that tall boy is my brother  
who is coming from far'

More examples of such extraposed restrictive RCs with head-NPs also containing postnominal adjectives are the following :

- (86) manzare -ye zibā -?i -ro did-am ke  
(scene-of) (beautiful)-DO (saw-I)(that)  
hič-vaqt farāmuš naxāh-am-kard  
(never) (forget)(Neg-will do-I)

'I have seen a beautiful scene  
that I shall never forget'

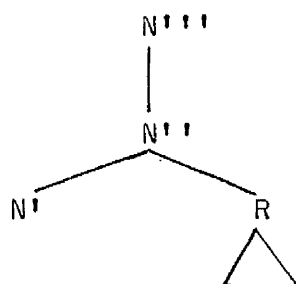
- (87) xune -ye bozorg -i xarid-am ke cār  
(house) (big) (bought-I)(that)(four)  
tā otāq dāre  
(thing)(room)(has)

'I bought a large house which  
has four rooms'

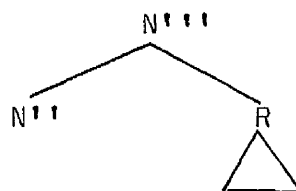
Examples of cooccurrences of (postnominal) adjectives and RCs such as those given above simply imply that RCs

must be complements of nominal categories different from those dominating adjective phrases. Since  $N'$ -complement position is reserved (as discussed in 3.3) for adjectives, the other available categories to dominate RCs are, therefore  $N''$  and  $N'''$ . Given this, to determine the nominal category which most adequately dominates RCs in Persian, assume for the present that RCs are complements of  $N''$  and  $N'''$ , and that they have two different syntactic structures, illustrated as follows.

(88)



(89)



As illustrated, the difference between the two structures (88) and (89) is that RCs (symbolized by the node  $R$ ) are embedded sentences of  $N''$ , in the former, and  $N'''$  in the latter. This, in fact, is Jackendoff's (1977b) analysis of English RCs that "... restrictive relative clauses are deep structure  $N''$ -complements and that appositives are deep structure  $N'''$ -complements."<sup>1</sup> Among

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1. Jackendoff (1977b), p. 62.

arguments supporting such an analysis is that the difference in semantic functions of restrictive and appositive RCs match those (conventionally) assigned for N''-complements and N'''-complements respectively, in Jackendoff's (1977b, pp. 72-76) general theory of complements.

As well as this, the syntactic fact (mentioned in 5.1.3) about the cooccurrence of English restrictive and appositive RCs (when modifying the same head-noun) appears to be a strong argument in favour of Jackendoff's (1977b) analysis of RCs.<sup>1</sup> Such an argument can not, however, be used to justify the syntactic structure of Persian RCs, simply because restrictive RCs in Persian do not cooccur with appositives. Thus, while NPs such as (90) can freely be used in English, their equivalent in Persian is not grammatical.

(90) the boy who was at the party, whom you  
saw, ...

(91)\* pesar -i ke tu mehmuni bud, ke  
(boy) (that)(in)(party) (was)(that)  
did-i, ...  
(saw-you)

Even if Persian could provide grammatical NP-construction with cooccurrences of restrictives and appositives (similar to (90) in English), the analysis in (88) above could not be correct for restrictive RCs for at least one

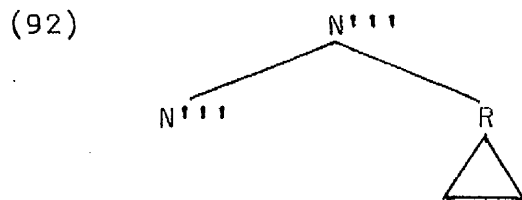
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1. See Jackendoff (1977b), p. 171.



important reason : relativization must involve full NPs. A reminder may be necessary here that full NPs in the proposed version of the X-bar theory (introduced in 1.3) for Persian are N'''s. Having said that, a structure such as that illustrated by the schema (89) in which RCs are embedded sentences within full nominal category N''' will be the next to be examined as follows.

As with (88), the analysis illustrated in (89) can not adequately present the structure of restrictive and appositive RCs of Persian. For instance, it wrongly predicts that head-NPs (presented in (89) by N'') are not full nominal categories. Thus, in view of such facts, it is proposed here that syntactic structure of RCs can best be illustrated as something roughly like (92) below, in which the NP which embeds RCs and the head-NP are both full NP.



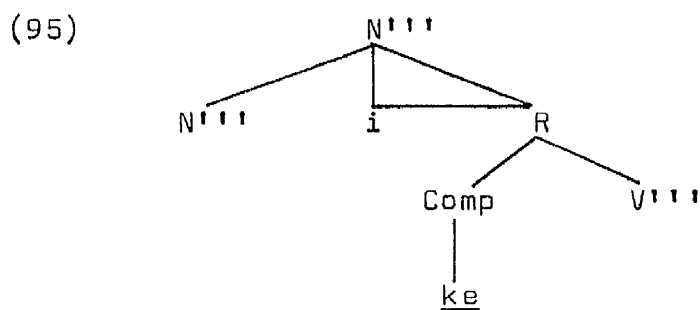
Now, to account for the structural differences between Persian restrictive and appositive RCs, the rel-i (discussed in 5.2.1b) should also be produced by the same rule which expands N'''s so as to contain restrictive RCs. Such differences can best be shown in this study by proposing PS-rules, (93) for restrictive RCs, and (94) for appositives.

(93)  $N''' \left[ N''' \quad i \quad R \right]$

(94)  $N''' \left[ N''' \quad R \right]$

Notice that the proposed rules (93) and (94) for RCs can also explain all points previously discussed (in 5.2.1) about elements of Persian relativization, that, for instance, RCs are embedded sentences within NPs, and that the rel-i is a syntactic constituent which must be generated in the base.

Having such rules, it is now possible to expand the node R, used for embedded sentences as RCs, such that it contains the complementizer ke 'that' (discussed in 5.2.1c) and V'''s. This expansion for restrictive RCs, for instance, would be as follows.



With the structure presented in (95), which underlies all instances of Persian restrictive RCs, discussion of the syntactic structure of RCs can be terminated here. Further arguments concerning the expansions of RCs will be presented in the following section. Since the two types of RCs, restrictive and appositive, are much the same in

regard to their internal structure (that is, the expansion of the node R in the above schemas), the following section is, for the sake of convenience and economy, addressed only to restrictive RCs, and their corresponding appositive RCs will not be presented unless their introduction is significantly relevant to the arguments.

### 5.3 PRONOMINALIZATION

The general picture so far presented for Persian relativization by the bulk of examples given previously in this chapter is that rel-NPs which are identical to head-NPs do not appear in the surface structure in phonological form. Thus, given the following sentences, the RC in (96), which contains a rel-NP in its unchanged phonological form, is ungrammatical, whereas (97), with deleted rel-NP, is grammatical.

- (96)\* nevisande-ye ketāb -i ke ketāb -o  
 (writer-of) (book) (that) (book)-DO  
dāri-mixun-i hamkelāsi-ye man -e  
 (are reading-you)(colleague-of)(I)(is)

- (97) nevisande-ye ketāb -i ke ∅ dāri-mixun-i  
 hamkelāsi-ye man -e  
 'the writer of the book you  
 are reading is my colleague'

There are, however, instances of RCs (shown by some of the examples in the previous section) where the rel-NP does actually appear in the surface structure in the form of an appropriate pronoun. For instance, considering

-š 'it' an appropriate enclitic pronoun for the rel-NP ketāb 'book', the grammatical structure corresponding to the ungrammatical (96) is also possible as :

- (98) nevisande-ye ketāb -i ke dāri-mixun-i-š  
 hamkelāsi-ye man -e  
 'the writer of the book you  
 are reading is my colleague'

This process of using appropriate pronouns in the surface structure for rel-NPs is commonly called 'Pronominalization'.<sup>1</sup> To study this process in more detail, the following discussions present a survey of pronominalization within Persian relativization and the analyses suggested for it in both Vajdi (1976) and Hajati (1977). Following these analyses and the problems which arise from them, this study proposes an original analysis of Persian pronominalization by a set of PS-rules in a much simpler and more plausible way. For this purpose, the present section is divided into two subsections entitled 'Previous Analyses' (in 5.3.1) and 'Possible Solution' (in 5.3.2). But, before this, there is one rather important point that needs to be made as follows.

In cases where rel-NPs can not be deleted completely,

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1. Ross (1969), pp. 187-188, defines pronominalization for English as a rule which "... replaces some noun phrase (NP) in a structure by a definite pronoun of the appropriate gender and number, when the first NP is in the environment of another NP which is identical to the first."

pronominalized rel-NPs can, except for the case to be discussed later, appear in the surface structure in both 'free' form (such as man 'I', to 'you', and u(n) 'he/she, it') and enclitic (like -(a)m 'I', -(a)t 'you', and -(a)s̄ 'he/she, it').<sup>1</sup> An example of such equal occurrences of free and enclitic pronouns can be seen in the following synonymous NPs.

- (99) otobus-i ke bā un be  
 (bus) (that)(with) (that)(be)  
 mosāferat raft-i  
 (travel) (went-you)  
 'the bus by which you travelled'

- (100) otobus -i ke bā -s̄ be mosāferat raft-i  
 'the bus by which you travelled'

Of the two forms of pronoun, the use of enclitics for pronominalized rel-NPs is generally preferred to the free forms in the spoken language. However, the fact that pronominalized rel-NPs can appear in the two forms (ie, free and enclitic) requires pronouns to be marked further with features such as [+Enclitic] for enclitics, and [-Enclitic] for free forms. According to such markings, the pronominalized rel-NPs un 'that', in (99), and -s̄ 'it', in (100), are of the types [-Enclitic] and

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1. For a full account of personal pronouns in 'free' and 'bound' forms of both the written and spoken forms of Persian, see Vajdi (1976), p. 130.

[+Enclitic], respectively.

### 5.3.1 Previous Analyses

To present a review of previous analyses of Persian pronominalization, Hajati's (1977) transformational approach, that rel-NPs must necessarily be pronominalized before undergoing any deletion, will be examined first. Hajati (1977, p. 114) considers pronominalization as an obligatory process of relativization, whose output (that is, pronominalizes rel-NPs) may, depending upon their grammatical positions in the embedded sentences, be deleted later in the surface structure. According to this view, sentences such as (101c), for instance, must have come from stages demonstrated in (101a) and (101b) below.

(101a)  $\frac{\text{doxtar}}{(\text{girl})}$   $\left[ \begin{array}{c} -i \text{ ke} \\ (\text{that})(\text{you}) \end{array} \right]$   $\frac{\text{to doxtar -ro}}{(\text{girl})-\text{DO}}$   
 $\frac{\text{mišnās-i}}{(\text{know-you})}$   $\left[ \begin{array}{c} \text{injā} \\ (\text{here})(\text{is}) \end{array} \right]$  -st

(101b)\* doxtar -i ke to u -ro mišnās-i injā -st

(101c) doxtar -i ke to Ø mišnās-i injā -st

'the girl whom you know is here'

Such an analysis of pronominalization as an obligatory process of relativization has the advantage of explaining all cases of RCs with rel-NPs appearing in the form of pronouns. However, it can not simply and properly explain cases such as (101b) above, where rel-NPs can not appear in the surface structure with lexical content

at all.

Faced with problems like this, Hajati's solution is to propose a transformational rule called "Pro-Deletion", which deletes those pronominalized rel-NPs which are not permitted to appear in surface. Yet, such a rule (viz., Pro-Deletion) needs to be constrained so that it does not affect the occurrence of permitted pronominalized rel-NPs, as well as those whose appearance is a matter of style. Following conditions on which the rule Pro-Deletion will have to be constrained, Hajati does indeed present several constraints, all of which depend heavily upon the grammatical position of rel-NPs in embedded sentences. Bringing together all these conditions, a general constraint is presented in Hajati's words, as follows.

"Deletion of simple coreferential PROs of S-rel is obligatory in the S-position; optional in DO- and IO- position; and blocked in PP-position."<sup>1</sup>

To clarify the cases of the above-quoted constraint, where the rule of Pro-Deletion is obligatory and where it is blocked, some examples are presented below.

(102a)  $\frac{\text{ketāb}}{\text{(book)}} \left[ -i \text{ ke } \frac{\text{ketāb}}{\text{(book)}} \text{ ru miz bud } \right]$

(102b)\* ketāb -i ke  $\frac{\text{un}}{\text{(that)}}$  ru miz bud

(102c) ketāb -i ke  $\emptyset$  ru miz bud

'the book which was on the table'

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1. Hajati (1977), p. 112.

(103a) pesar [-i ke ketāb -o az pesar  
(boy) (that) (book) -DO (from) (boy)  
xarid-i  
(bought-you)]



(104)\* ali un pesar-i -ro ke to un/u  
 (Ali)(that)(boy) -DO (that)(you)(that/he)

-ro mišnās-i hanuz nadide  
 -DO (know-you)(yet) (Neg-has seen)

'Ali has not yet seen the boy  
 whom you know (him)'

(105)\* bačče-hā un gedā-?i -ro ke to  
 (children) (that)(begger)-DO (that)(you)

pul Ø dād-i aziyat-mikon-and  
 (money) (gave-you)(bother-they)

'children bother the begger to  
 whom you gave money'

Contrary to Hajati's constraint for the operation of his rule Pro-Deletion, pronominalized rel-NPs can not (particularly, in the spoken language) appear in the surface structure if they are the DO of their embedded sentences, nor can they be deleted if they are in prepositional phrases. This error in Hajati's consideration of the appearance and deletion of pronominalized rel-NPs, among other equally important reasons, motivates the detailed investigation into the process of Persian pronominalization of rel-NPs which is presented in 5.3.2. However, observing the correct appearance of pronominalized rel-NPs in the spoken language, grammatical sentences corresponding to (104) and (105) would be such as the

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← examples (33b) in p. 120 and (35c) in p. 121 respectively, except for minute changes resulting from presentation of the written language in the spoken form.

following :

- (106) ali un pesar -i -ro ke to Ø nemišnās-i  
hanuz nadide  
'Ali has not yet seen the boy  
whom you know'

- (107) bačče-hā un gedā -?i -ro ke to pul  
be -s dād-i aziyat-mikon-and  
(to)-(him)  
'children bother the beggar to  
whom you gave money'

Notice that the ungrammaticality of Hajati's grammatical sentences such as (105) above with the rel-NP in IO position (of embedded sentences) can not be accounted for by, for instance, difference in style or dialect, for one major reason : that IOs are, in fact, prepositional phrases, which according to the above-mentioned constraint, can not be deleted in the surface structure.

Furthermore, Hajati, although he repeatedly gives examples of pronominalized rel-NPs in the possessive construction,<sup>1</sup> does not offer any condition, different from the constraint (quoted earlier) for the deletion of simple rel-NPs, to block the operation of his rule Pro-Deletion, if pronominalized rel-NPs are possessive elements. To clarify such constructions, consider the following examples.

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1. See, for instance, examples in Hajati (1977), pp. 124, 125 and 126.

(108a) mard /-i ke /pesar -e mard /  
 (man) (that) (boy-of) (man)  
 dāre-miyā-d / dust -e man -e  
 (is coming-he) (friend-of)(I)(is)

(108b) mard -i ke pesar -e -s dāre-miyā-d  
 (him)  
 dust -e man -e  
 'the man whose son is coming  
 is my friend'

(108c)\* mard -i ke pesar -e ∅ dāre-miyā-d  
 dust -e man -e

(109a) mard /-i ke to /pesar -e mard /  
 (man) (that)(you) (boy -of)(man)  
 -o mišnās-i / dust -e man -e  
 -DO (know-you) (friend-of)(I) (is)

(109b) mard -i ke to pesar -e -s -o mišnās-i  
 dust -e man -e  
 'the man whose son you know is  
 my friend'

(109c)\* mard -i ke to pesar -e ∅ -o mišnās-i  
 dust -e man -e

(110a) man bā mard /-i ke pesar -e  
 (I) (with)(man) (that)(son -of)  
mard bā to dust -e / da?vā-kard-am  
 (man)(with)(you)(friend)(is) (fought-I)

(110b) man bā mard -i ke pesar -e -s bā to  
 dust -e da?vā-kard-am  
 'I fought with the man whose son  
 is your friend'

(110c)\* man bā mard -i ke pesar -e  $\emptyset$  bā to  
 dust -e da?vā-kard-am

As demonstrated by the examples such as the above, pronominalized rel-NPs can not be deleted in whatever grammatical position, if they are used in the possessive construction. Since this fact is not confirmed as, for instance, a sort of condition restricting the operation of the rule which permits the deletion of pronominalized rel-NPs, Hajati's Pro-Deletion rule (as discussed above) seems too strong.

In short, Hajati's (1977) approach to pronominalization has made the whole process of Persian relativization so complicated that an explicit rule for just RC-formation is almost impossible to formulate, unless it include pronominalization and, of course, its multiple-case constraints. This complication has also been a problem for Hajati himself, who, in discussing the operation of his proposed rule Pro-Deletion and its constraints, effectively states : "Why indeed such a phenomenon (ie, Pro-Deletion) exists in Persian, I simply do not know."<sup>1</sup>

Similarly to Hajati, Vajdi (1976) also thinks of pronominalization of rel-NPs as a very complicated process which can not be accounted for by any transformational rules whatsoever. To demonstrate this view, her statement

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1. Hajati (1977), p. 111, (the explanation within parantheses is my own).

is quoted below.

"The process of Pronominalization in Persian is the case that might prove the deficiency of T.G. and the need for some modification of the theory. Although by showing the deep structure of sentences in which there are pronouns we can show the actual relation between elements of sentences, we can not give a compact general rule for getting to the surface structure from the deep structure. The conditions are varied and the whole process is so complicated that it cannot be captured by one or two rules."<sup>1</sup>

Vajdi's (1976) approach to the process of pronominalization of rel-NPs which resulted in the above-quoted statement is that pronominalization is a transformational rule, independent from relativization, which in respect of RCs is : (1) obligatory, (2) optional, and (3) forbidden, depending upon individual cases. Observing different cases of RCs with or without pronominalized rel-NPs, Vajdi does not make any further attempt actually to seek syntactic (or even semantic) reasons behind such a "complicated" process. Such an attempt could, at least, have made it possible for her to capture the governing rules of transformation for Persian pronominalization (particularly in RCs). From the conclusion drawn from her study of Persian pronominalization, it is clear that Vajdi was completely puzzled by different cases of pronominalization in RCs where pronominalized rel-NPs must, for instance, obligatorily be deleted in one case, whereas, in other cases, they can well lead to personal pronouns in surface structure. Notice this problem in her writing below :

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1. Vajdi (1976), pp. 138-139.

"The process of Pronominalization is a quite complicated one in Persian because we cannot pronominalize the identical and coreferential noun-phrase in the embedded sentence, or the second conjoined sentence, in all cases. Sometimes, we have to pronominalize it and sometimes, we have to omit it."<sup>1</sup>

In spite of Vajdi's (1976) statements (quoted above) that pronominalization is a very complicated process, the following subsection will present a further examination of the process of pronominalization in Persian RCs which shows that it is possible to account for pronominalization simply by rules of PS, compatible with those presented so far in the version of the X-bar theory for the structure of NPs in Persian.

### 5.3.2 Possible Solution

To present a possible solution to the analysis of pronominalization of rel-NPs, it is first necessary to closely investigate all types of syntactic structures in which rel-NPs appear. For this purpose, the best collection of various cases of RCs involving the pronominalization of rel-NPs is given in Hajati (1977), as follows.

Hajati (1977, p. 113) examines both head-NPs and rel-NPs as from four possible positions : subject (Su), direct object (DO), indirect object (IO), and the NP of prepositional phrases (PP). Considering such possible grammatical positions for both head-NPs and rel-NPs, Hajati then lists

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1. Vajdi (1976), p. 138.

sixteen categories of RCs, such that each category varies from others in that its head-NP or rel-NP holds a different grammatical position. Out of these sixteen categories, for the reasons discussed below, only three cases have been chosen to be dealt with here, where rel-NPs, and not head-NPs, vary in their grammatical positions Su, DO, and IO.

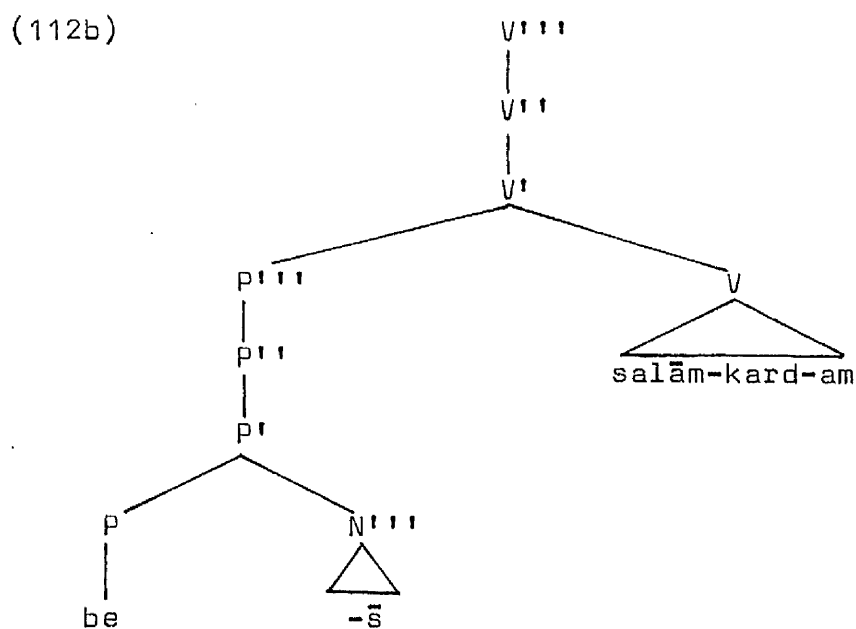
To understand the reasons for choosing only three cases out of Hajati's sixteen categories of RCs, recall that, given the arguments presented in 5.2.2 for the expansion of NPs to embed RCs, head-NPs, regardless of grammatical position they have in the matrix sentences as the subject, object, etc., can, in fact, only be syntactically N'''s. Accepting this fact, there is no longer any need to account for those of Hajati's categories of RCs in which head-NPs belong to different grammatical positions. What remains to be discussed here are, therefore, those categories with rel-NPs (and not head-NPs) in different grammatical positions within embedded sentences. Such grammatical positions are as follows.

- (111) a. Subject
- b. Direct Object
- c. Indirect Object
- d. Prepositional Phrase.

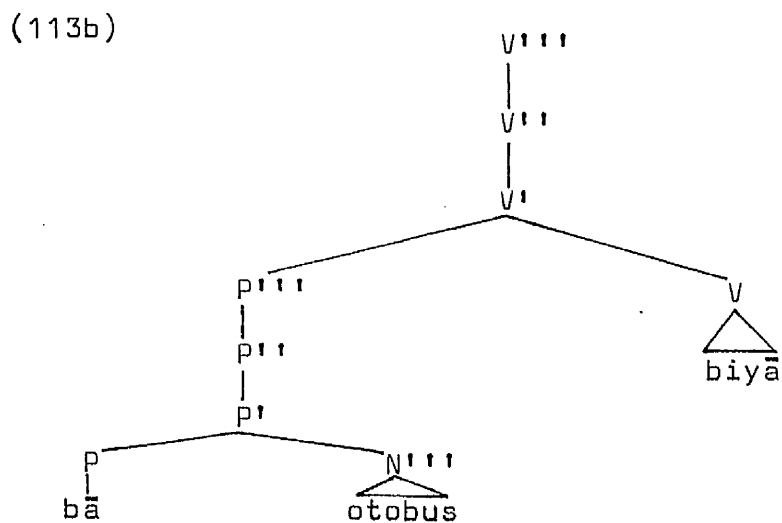
Among the four cases listed in (111), note also that NPs used in grammatical IO and PP positions belong, according to the X-bar theory, to the same syntactic position, that is, N''' immediately dominated by P'. To

clarify this, consider the syntactic structure of the IO and PP of the following examples, as demonstrated in (112b) and (113b), respectively.

- (112a) be -š salām-kard-am  
 (to)(him) (saluted-I)  
 'I saluted him'



- (113a) bā otobus biyā  
 (with)(bus) (come)  
 'come by bus'





Since the two grammatical positions IO and PP (as in examples (112) and (113) above, respectively) exhibit the same sort of syntactic characteristic (ie, they both contain P'''s consisting of P and N'''), it is only necessary to deal with one of them here, either the IO or PP position.

Now, considering NPs in the IO and PP as belonging to the same syntactic position, there are altogether three cases of pronominalization of rel-NPs to be studied here : (a) where rel-NPs are the subject, (b) where rel-NPs are the object, (c) where rel-NPs are indirect object or within PPs of embedded sentences. These cases will be dealt with separately as follows.

The first case to be dealt with is the pronominalization of rel-NPs used as the subject of their embedded sentences. Examples of such RCs are :

(114a)\* pesar -i ke u dāre-miyā-d  
(boy) (that)(he)(is coming-he)

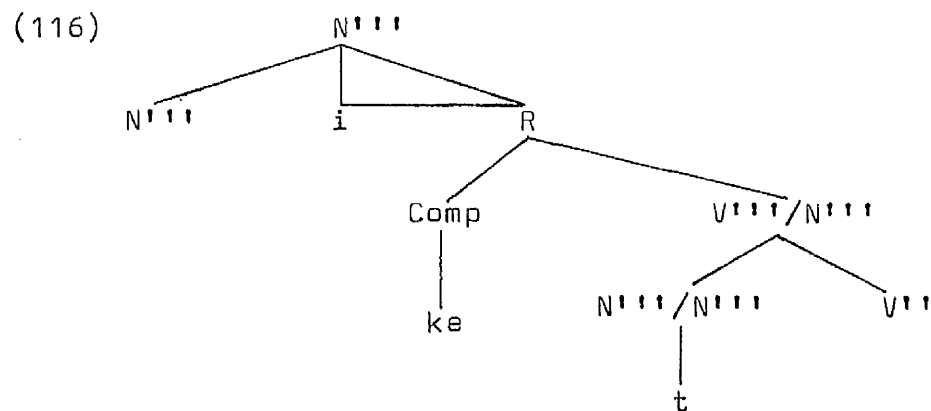
(114b) pesar -i ke ∅ dāre-miyā-d  
'the boy who is coming'

(115a)\* ketāb -i ke un ru miz -e  
(book) (that)(that)(on)(table)(is)

(115b) ketāb -i ke ∅ ru miz -e  
'the book which is on the table'

As demonstrated by (114a) and (115a), rel-NPs can not appear in the surface structure with lexical content if

they are the subject of their embedded sentences. This implies that RCs with subject rel-NPs contain a hole of the type NP in them. Thus, to explore the syntactic structure of such RCs, a simpler alternative to Hajati's (1977) transformational approach discussed above (that rel-NPs must first be pronominalized and then, in cases like (114b) and (115b) above, be deleted) is taken here by employing Gazdar's (1980b, pp. 56-67) 'derived' PS-rules (introduced in 1.3.3) of unbounded syntactic dependencies. Having such resources, the syntactic structure of RCs such as (114) and (115) above can be demonstrated as follows, where the embedded sentence  $V'''/N'''$  contains an NP hole, and leads to the derived category  $N'''/N'''$  which must have no lexical content in the surface structure.



To predict the lexical emptiness of rel-NPs in configurations such as these, a general "linking rule" (see 1.3.3) can be put forward to eliminate derived categories of the form  $\beta/\beta$ . Such a general rule can have the following form, where the symbol  $\underline{t}$  (as in (116))

is used to indicate a phonological null dummy element.

$$(117) \quad \begin{matrix} \text{N}'''/\text{N}''' \end{matrix} \left[ \begin{matrix} t \end{matrix} \right]$$

Having proposed (116) as the structure of RCs with subject rel-NPs (as in (114) and (115) above), it is now possible to set up a 'projection path' in RCs to predict categories which contain holes in them, and must in effect lead to a phonologically null dummy element is the surface structure. Thus, the structure schema (116) indicates clearly that  $V'''$  is one of such categories in the projection path, which must be of the form  $V'''/\text{N}'''$  to result in a grammatical structure.

It may be noted that the pronominalization of subject rel-NPs in RCs is not the same as that of the subject in embedded sentences of ordinary declaratives. To illustrate this, some examples of the pronominalization within ordinary declarative sentences are given below.

- (118) ahmad nemidunest  $\left[ \begin{matrix} (ke) & u & ham & tu \\ (Ahmad) & (Neg-knew) & (that) & (he) & (also) & (in) \end{matrix} \right]$   
 emtehān qabul-šode  $\left[ \begin{matrix} \end{matrix} \right]$   
 (exam) (has passed)
- 'Amad didn't know that he also  
 has passed the exam'

- (119) ahmad goft  $\left[ \begin{matrix} (ke) & u & ham & tu \\ (Ahmad) & (said) & (that) & (he) & (also) & (in) \end{matrix} \right]$   
 mehmuni da?vat-dāre  $\left[ \begin{matrix} \end{matrix} \right]$   
 (party) (is invited)
- 'Ahmad said that he is also  
 invited to the party'

In these sentences, the pronoun u 'he/she' can be interpreted as referring to ahmad 'Ahmad' (the subject of the matrix sentence) or someone else who is not mentioned here. To explain this fact, the best analysis to be utilized appears to be that proposed by Chomsky (1977) for English : "... to assume that pronouns are base-generated and permitted to refer freely."<sup>1</sup> For relative clauses, however, such an assumption must be limited by some sort of (following Chomsky (1977, p. 81)) "rule of predication" so that RC's which do not contain a pronominalized rel-NP interpreted as referring to the head-NP are filtered out.

The second case to be examined is RCs with rel-NPs as the direct object of their embedded sentences. Examples of such RCs are as follows :

(120a)\* pear -i ke u -ro miṣnās-i  
(boy) (that)(he)-DO (know-you)

(120b) pesar -i ke ∅ miṣnās-i

'the boy whom you know'

(121a)\* xune -?i ke un -o xaride-?i  
(house) (that)(that)-DO (have bought-you)

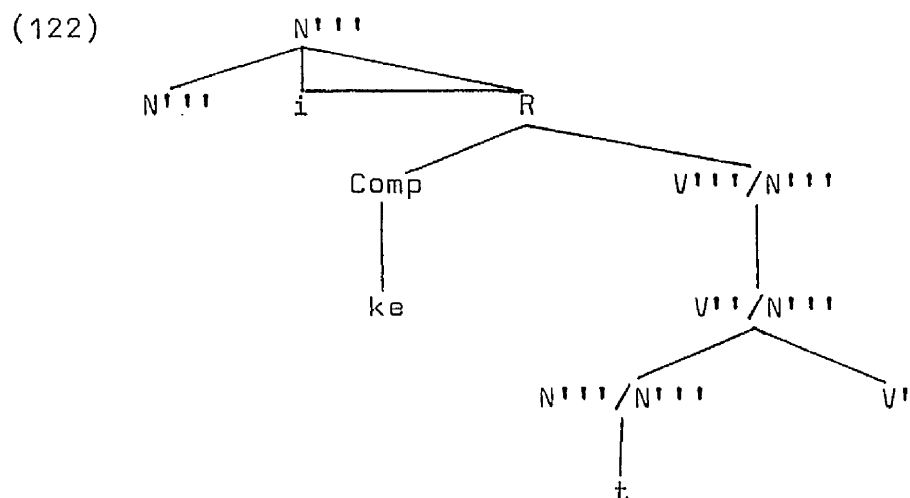
(121b) xune -?i ke ∅ xaride-?i

'the house which you have bought'

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1. Chomsky (1977), p. 81.

Since (120a) and (121a) with pronominalized rel-NPs in the phonological forms u 'he' and un 'that' respectively, are not grammatical, it is clear that RCs with direct object rel-NPs contain a hole of the type NP in them, and must in the framework utilized here result from the expansion of derived categories, as demonstrated below.



Proposing (122) as the general structure for RCs like those in (120) and (121), it is quite predicatable that the linking rule presented in (117) above for the elimination of subject rel-NP in surface structure can also operate here to simply explain the occurrence of direct rel-NPs (in the form of N'''/N''' in (122) above) of these RCs as phonologically null. Furthermore, the structure schema (122) indicates that the verb phrase V' is also within the proposed projection path of RCs, and must therefore be necessarily of the derived form V'''/N''' to lead to a grammatical structure.



Finally, the third case of pronominalization of RCs involves rel-NPs which are indirect objects or are within PPs of their embedded sentences. Such RCs are as follows.

(125a)    pesar -i ke        ketāb -o be -s dād-i  
              (boy)        (tha)(book) -DO(to)(him)(gave-you)

'the boy to whom you gave  
 the book'

(125b)\* pesar -i ke ketāb -o (be) ∅ dād-i

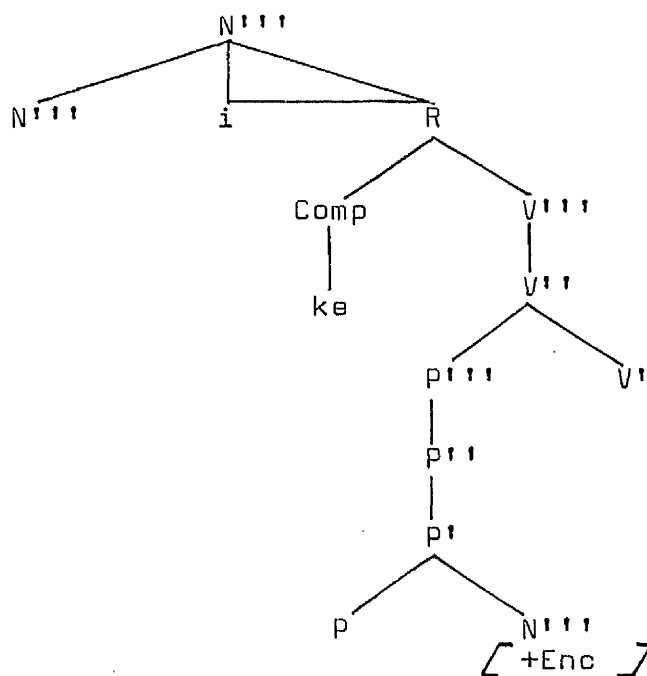
(126a) xune -?i ke        dar un        zendegi-mikard-am  
              (house)    (that)(in)(that)(was living-I)

'the house in which I lived'

(126b)\* xune -?i ke (dar) ∅ zendegi-mikard-am

In these structures, rel-NPs must appear in proforms. This fact simply implies that rel-NPs involved in PPs must not result from the expansion of derived categories, and PPs are not within the projection path of RCs, which can contain a hole of the type NP in them. Having said this, and ignoring, for the sake of greater clarity in the following schema, the presence of direct objects, examples like (125a) and (126a) above must then have their syntactic structures as illustrated in (127) below.

(127)



As in the first case, the interpretation of the pronominalized rel-NPs involved in PPs of RCs and that of pronouns in PPs of ordinary declarative embedded sentences is different in that the reference of the former is limited by the 'rule of predication' (mentioned earlier) to the head-NPs, whereas the latter have free reference. To clarify this, compare the reference of the pronominalized rel-NP in examples (125a) and (126a) above with that of the pronouns in the following declarative sentences.

- (128) ahmad nevešte (ke) barā -s  
 (Ahmad)(has written) (that) (for)(him)  
 pul befres-im-7  
 (money)(send-we)  
 'Ahmad has written (and asked)  
 that we send him money'



- (129) un xeili dust-dāre [ (ke) bā -s̄  
 (he)(very)(likes) (that)(with)(him)  
 mašverat-kon-am ]  
 (consult-I)  
 'he very much likes that I  
 consult with him'

In examples such as these, the pronoun in the enclitic form -s̄ 'him' can be interpreted as referring to either the head-noun or someone not mentioned in the sentence. This is, of course, not be the case with pronominalized rel-NPs, as shown in examples above.

In conclusion, the process of pronominalization in RCs can best be analysed as resulting from the expansion of two different categories. RCs with subject rel-NPs and those with [ -Enclitic ] direct object rel-NPs, which contain a hole of the type NP in the surface structure, result from the expansion of the derived category  $V'''/N'''$ . Unlike these, RCs with [ +Enclitic ] rel-NPs and those whose rel-NPs are within PPs have the category  $V'''$  as the source of their expansion. In view of this analysis, the sentential node R which is used to represent embedded sentences as RCs can now be expanded in the following ways.

- (130)  $\underset{R}{[ \text{ke } V'''/N''' ]}$

- (131)  $\underset{R}{[ \text{ke } V''' ]}$

From the implication of derived categories, it is clear that the rule (130) generates RCs with holes in them, and in (131) generates RCs with rel-NPs in the surface

structure in the form of appropriate pronouns. To distinguish the categories which lead to a hole in the surface structure of RCs from those which result in pronouns, a projection path is proposed for the RCs here, which predicts that only verb phrases of the level  $V'''$  and  $V''$  must have a hole of the type NP in them, and must therefore be in the form of derived categories  $V'''/N'''$  and  $V''/N'''$  respectively. In accordance with the projection path, PPs and verb phrases of the level  $V'$  can not have a hole in them, and rel-NPs dominated by such categories must therefore be in the form of appropriate pronouns.

#### 5.4 SUMMARY

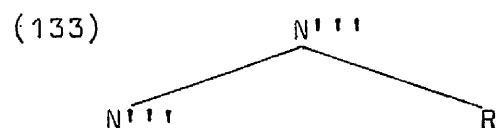
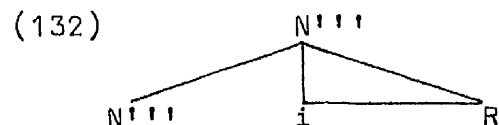
RCs are sentences which function as NP-complements. These complements are syntactically and semantically of two types : Restrictive and Appositive. Such distinctions for RCs are also made in both traditional and generative grammars of Persian. Traditional grammarians have mostly considered RCs as (a type of) subordinate clauses with ke 'that', the complementizer, as the relative pronoun equivalent to English who, which, etc. Unlike them, generative grammarians of Persian have claimed that the complementizer ke 'that' can not be a relative pronoun at all. These grammarians have employed, within the transformational framework, the NP-S Analysis for Persian restrictive RCs, and generally ignored appositives.

Since the generative analyses so far presented for

the process of Persian relativization have some technical shortcomings (discussed in 5.1.3a), this chapter is dedicated to arguments concerning RCs and their related problems. Towards this aim, syntactic discussions of RCs are divided into two parts. Part one explores elements of relativization and part two addresses itself to the syntactic structure of RCs. As one of the arguments about the element of relativization, there are good reasons (presented in 5.2.1a) for considering that RCs are embedded sentences within NPs. Following this, restrictive RCs require a linking morpheme (referred to as the 'rel-i') to attach to head-NPs. This linking morpheme is, of course, different from the indefinite marker -i, which attaches to the end of NPs in various ways (discussed in 5.2.1b). Another element of Persian relativization (dealt with in 5.2.1c) is the complementizer ke 'that' (called the 'ke-rel'). As mentioned earlier, ke-rel is not a relative pronoun, which can be substituted for relativized NPs. Furthermore, there is no relative pronoun whatsoever in Persian. Finally, the last set of arguments (presented in 5.2.1d), in line with elements of relativization, are those demonstrating syntactic differences between restrictive RCs and appositives. These arguments are also followed by those about the syntactic structure of RCs.

Considering the fact that relativization must involve full NPs, syntactic structures proposed by Jackendoff (1977b) for English RCs can easily be amended to the

following (132) and (133) to underlie Persian RCs of the types restrictive and appositive, respectively.



In structures such as these, R is employed as a sentential node for embedded sentences as RCs. This node is later expanded to the complementizer ke 'that' and V''' or the derived category V'''/N''', which must be expanded differently to account for the status of relativized NPs (called 'rel-NPs) in the surface structure.

One of the possibilities of the occurrence of rel-NPs is that they may appear in the surface structure in the form of appropriate pronouns. This process is commonly called 'pronominalization'. To analyse pronominalization within RCs the expansion of the sentential node R to the complementizer ke 'that' and V''' or the derived category V'''/N''', as proposed in this study, appears to be simpler and more plausible than the alternative transformational approach suggested by Hajati (1977), which first pronominalizes rel-NPs and then deletes them in particular grammatical positions. According to the analysis proposed here (in 5.3), rel-NPs which result from the

expansion of the derived category  $V'''/N'''$  must be interpreted as holes, and those resulting from  $V'''$  appear in the surface structure as pronouns. Such appearances of rel-NPs either as a hole or in the form of a pronoun are further restricted by the projection path proposed here for RCs, that only the categories  $V'''$  and  $V''$  can contain a hole of the type NP in them to result in grammatical structures. Thus, given the projection path, PPs and verb phrases of the level  $V'$  can not contain a hole, and must therefore be expanded in the usual way and lead rel-NPs to appropriate surface structure pronouns.

### CONCLUSION

Following the introductory discussions of chapter one, which provided some clarification for the subject, the language, and the theoretical framework (including the three level system of the X-bar Convention) of this study, the analysis presented in chapter two showed that the structure of NPs in Persian consists of a pronoun or a head-noun and various types of pre- and postnominal modifiers. Prenominal modifiers are of three different categories established (in 2.1.2a) as : demonstrative, quantifier, and prenominal adjective, which in the three-level system of PS-rules utilized in the thesis are distinguished from each other as belonging to different syntactic levels of NPs. Demonstratives ( as discussed in 2.3.3) are prenominal modifiers of  $N'''$ , quantifiers (as discussed in 4.3.2) prenominal modifiers of  $N''$ , and prenominal adjectives (as discussed in 3.3.1) modifiers of  $N'$ .

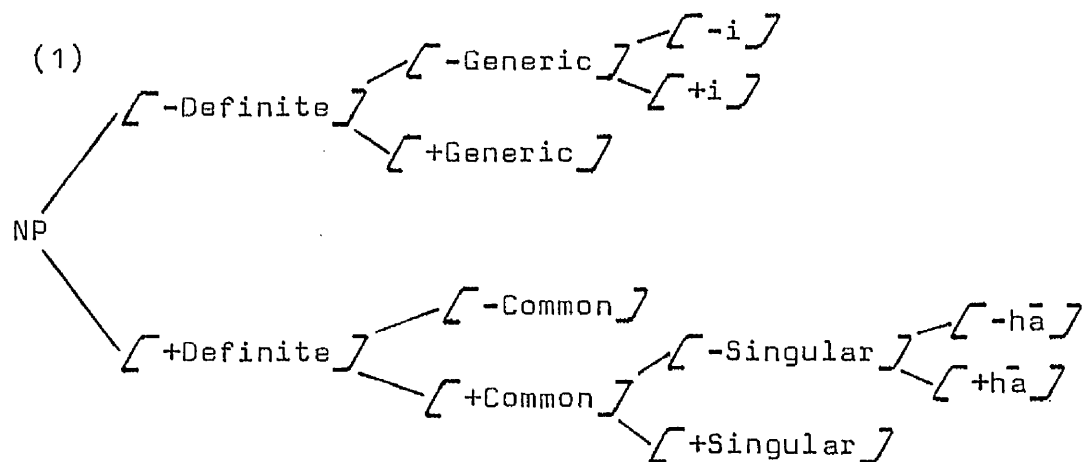
Like prenominal modifiers, postnominal modifiers are of different types (differentiated in 2.1.2c), which fall into three categories. These categories are also distinguished from each other on the basis of the level of the nominal category in which they occur. Thus, the postnominal modifier position of the first level of nominal categories (that is,  $N'$ -complement) belongs to postnominal adjectives (as discussed in 3.3.1), the

second (that is, N''-complement) to restrictive PPs and possessive elements (as discussed in 2.1.2c), and the third (that is, N'''-complement) to those like relative clauses (as discussed in 5.2.2).

Given this analysis, and also the distinguishing syntactic features of NPs (established in chapter two), this study is finally concluded by the following comprehensive set of context-free PS-rules, which with the help of no transformations, is capable of generating all the different types of grammatical NPs in Persian. However, before presenting these rules, the point needs to be emphasized that this study is, to the best of the writer's knowledge, the first ever done in detail on the noun phrase in the spoken form of Persian. Furthermore, another equally important contribution of this study is that many issues analysed here have either not been discussed previously in generative grammars even for written Persian, or have been analysed but (for the reasons given in 3.1.3, 4.1.3, and 5.1.3) unsatisfactorily. Furthermore, as discussed at the beginning of each chapter, these issues have not been accounted for adequately in traditional grammars of Persian. It is hoped that this study will provide a basis for further studies of the spoken form, as well as the written form of Persian, for many of the analyses presented here for spoken Persian are also valid for the written form of the language.

To present the set of PS-rules resulting from the

analyses in this study, a table of distinguishing features of NPs and their relationship to each other (as discussed in 2.1.1) is given below.



For a simpler presentation, the features above are indicated in the following rules by their initial letters. Thus,  $[-C]$ , for instance, indicates the feature  $[-Common]$ , and so on. As in previous cases, each of these features also entails its corresponding preceding features. For example, the feature  $[-Generic]$  also marks its NP as  $[-Definite]$ . Following the HFC principle, each of such features do not, of course, need to be listed under each category specifically unless changed by the rule. However, defining features of a category, in cases where their indication restricts the application of rules to that particular category, are provided in the rules given below.



(2) Rules for  $N'''$ 

- a.  $N''' \left[ N'' \right]$
- b.  $\left[ \begin{smallmatrix} N''' \\ +i \end{smallmatrix} \right] \left[ \begin{smallmatrix} N'' \\ -i \end{smallmatrix} \right] i$
- c.  $\left[ \begin{smallmatrix} N''' \\ -C \end{smallmatrix} \right] \left[ \begin{smallmatrix} N'' \\ -C \end{smallmatrix} \right] N'''$
- d.  $\left[ \begin{smallmatrix} N''' \\ +D \end{smallmatrix} \right] \left[ D''' \left[ \begin{smallmatrix} N'' \\ +D \end{smallmatrix} \right] \right]$
- e.  $\left[ \begin{smallmatrix} N''' \\ \propto D \\ -i \end{smallmatrix} \right] \left[ \begin{smallmatrix} N'' \\ \propto D \\ -i \end{smallmatrix} \right] R$
- f.  $\left[ \begin{smallmatrix} N''' \\ +D \end{smallmatrix} \right] \left[ \begin{smallmatrix} N'' \\ +D \end{smallmatrix} \right] -i R$

(3) Rules for  $N''$ 

- a.  $N'' \left[ N' \right]$
- b.  $\left[ \begin{smallmatrix} N'' \\ +i \end{smallmatrix} \right] \left[ \begin{smallmatrix} N' \\ -i \end{smallmatrix} \right] i$
- c.  $\left[ \begin{smallmatrix} N'' \\ +C \end{smallmatrix} \right] \left[ Q''' \left[ \begin{smallmatrix} N' \\ +C \end{smallmatrix} \right] \right]$
- d.  $\left[ \begin{smallmatrix} N'' \\ -G \\ -i \end{smallmatrix} \right] \left[ Q''' \left[ \begin{smallmatrix} N' \\ -G \\ -i \end{smallmatrix} \right] \right]$

$$e. \quad \left[ \begin{array}{c} N''' \\ +C \end{array} \right] \left[ \begin{array}{c} N' \\ +C \end{array} \right] e \quad N''' \quad ]$$

$$f. \quad \left[ \begin{array}{c} N''' \\ +C \end{array} \right] \left[ \begin{array}{c} N' \\ +C \end{array} \right] e \quad P''' \quad ]$$

(4) Rules for N'

$$a. \quad N' \left[ \begin{array}{c} N \end{array} \right]$$

$$b. \quad \left[ \begin{array}{c} N' \\ +C \end{array} \right] \left[ \begin{array}{c} A''' \\ \left[ \begin{array}{c} N \\ +C \end{array} \right] \end{array} \right]$$

$$c. \quad \left[ \begin{array}{c} N' \\ +G \end{array} \right] \left[ \begin{array}{c} A''' \\ \left[ \begin{array}{c} N \\ +G \end{array} \right] \end{array} \right]$$

$$d. \quad \left[ \begin{array}{c} N' \\ +C \end{array} \right] \left[ \begin{array}{c} N \\ +C \end{array} \right] e \quad A''' \quad ]$$

$$e. \quad \left[ \begin{array}{c} N' \\ +G \end{array} \right] \left[ \begin{array}{c} N \\ +G \end{array} \right] e \quad A''' \quad ]$$

In addition to these, the PS-rules presented earlier (in 5.3.2) for the expansion of relative clauses (R), and also the metarules relating grammatical structures within N' and adjective phrases (A''') must also be included in the set of PS-rules here, as follows.

$$(5) \quad R \quad \left[ \begin{array}{cc} & ke \\ & V''' \end{array} \right]$$

$$(6) \quad R \quad \left[ \begin{array}{cc} & ke \\ & V'''/N''' \end{array} \right]$$

$$(7) \quad N' \quad \left[ \begin{array}{cc} N & e \\ & \left[ \begin{array}{c} A''' \\ Post \end{array} \right] \end{array} \right] \Rightarrow$$

$$N' \quad \left[ \begin{array}{cc} \left[ \begin{array}{c} A''' \\ Pre \end{array} \right] \emptyset & N \end{array} \right]$$

$$(8) \quad \left[ \begin{array}{c} A''' \\ Tar \end{array} \right] \left[ \begin{array}{cc} & \left[ \begin{array}{c} P''' \\ az \end{array} \right] \end{array} \right] \left[ \begin{array}{c} A''' \\ Tar \end{array} \right] \left[ \begin{array}{cc} & Adv''' \end{array} \right] \left[ \begin{array}{c} A' \\ Tar \end{array} \right] \dots \Rightarrow$$

$$\left[ \begin{array}{c} A''' \\ Tar \end{array} \right] \left[ \begin{array}{cc} & Adv''' \end{array} \right] \left[ \begin{array}{c} A' \\ Tar \end{array} \right] \left[ \begin{array}{cc} & \left[ \begin{array}{c} P''' \\ az \end{array} \right] \end{array} \right] \left[ \begin{array}{c} A' \\ Tar \end{array} \right] \dots$$

It can now be seen that the set of PS-rules given above, which results from the analyses presented throughout the thesis, is so simple and economical that with a relatively small number of base-rules (and no transformations) it is capable of generating all instances of grammatically simple NPs and those involving relative clauses in Persian.

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- ii. FL : Foundations of Language.
- iii. IJAL : International Journal of American Linguistics.
- iv. JL : Journal of Linguistics.
- v. LA : Linguistic Analysis.
- vi. LI : Linguistic Inquiry.
- vii. Ling : Lingua.
- viii. Lng : Language.
- ix. PTRS : Philosophical Transactions of the Royal Society.
- x. SL : Studies in Language.
- xi. TPS : Transactions of the Philological Society.

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